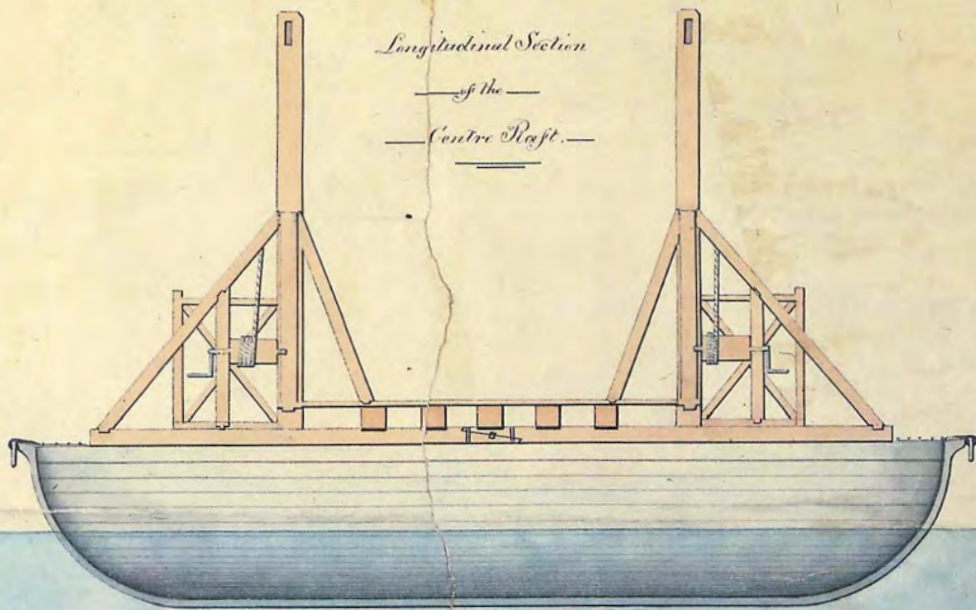


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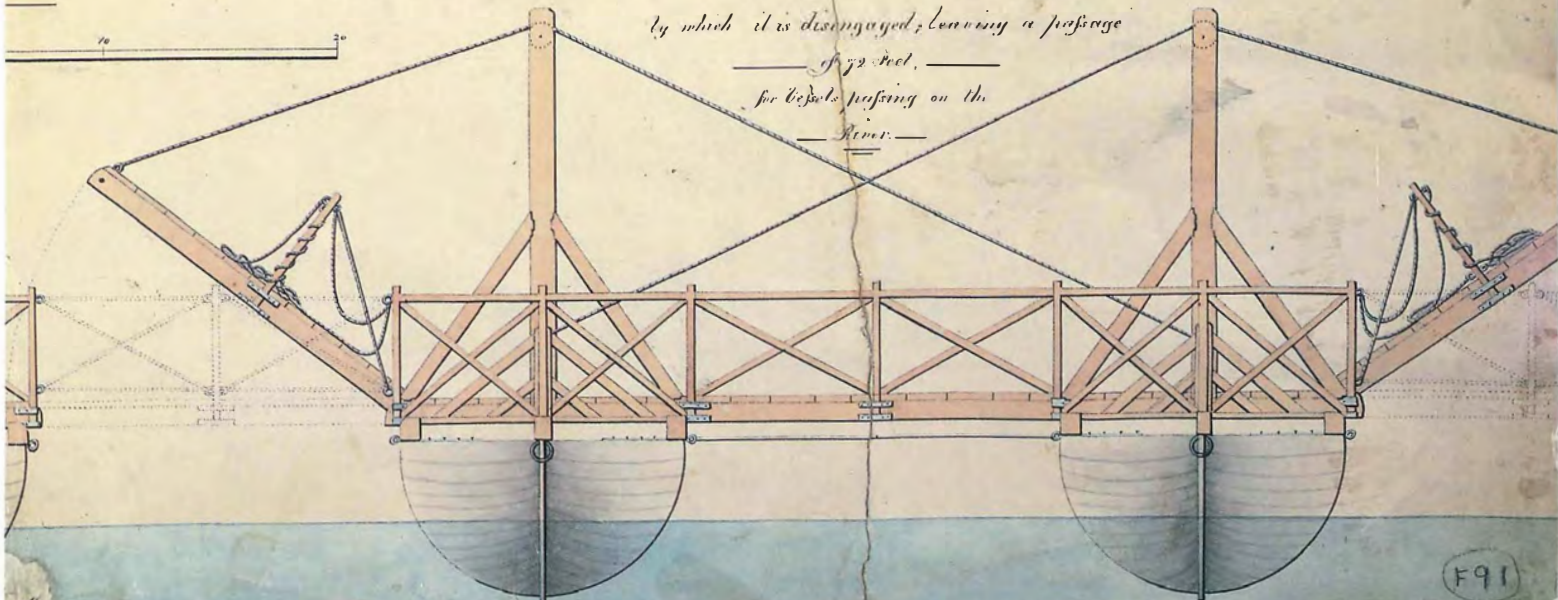
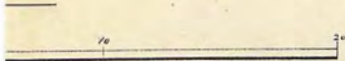
Department of Main Roads
Annual Report
1987 - 88



*Longitudinal Section
of the
Centre Raft.*

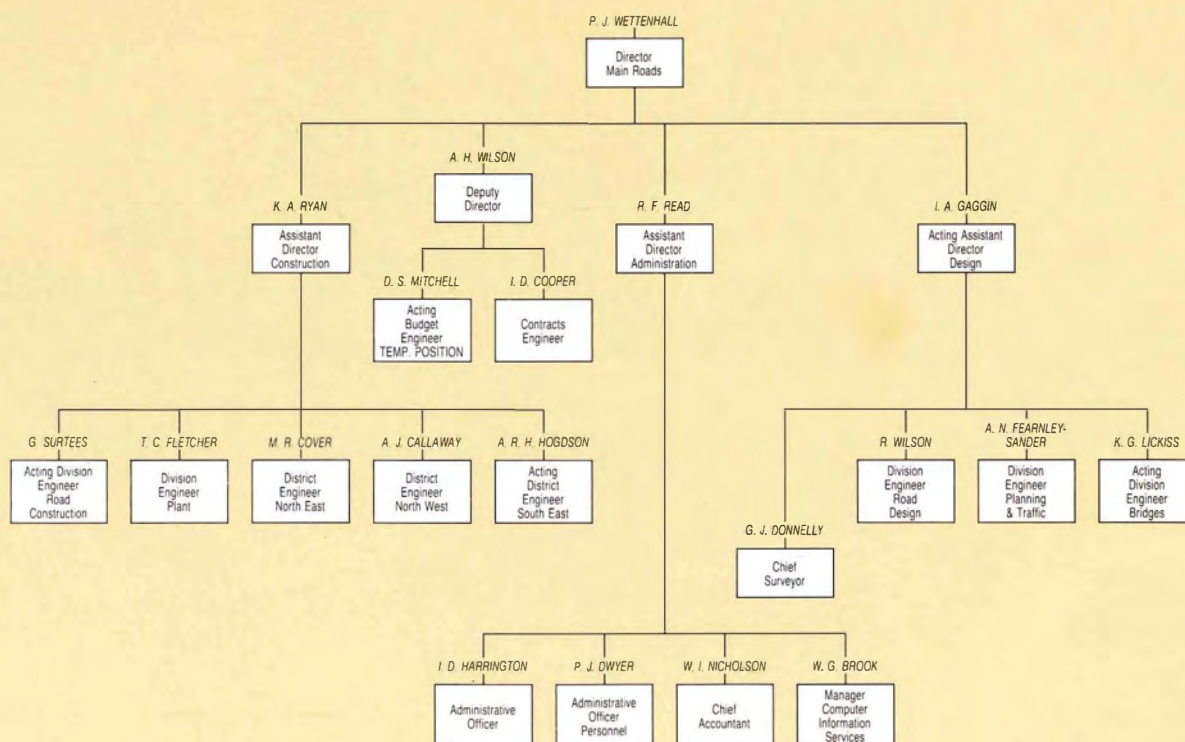


*Transverse Section through the centre Raft, showing the mode
by which it is disengaged, leaving a passage
of 72 feet,
for vessels passing on the
River.*





R. F. READ K. A. RYAN P. J. WETTENHALL A. H. WILSON I. A. GAGGIN



PRINCIPAL OFFICERS



It is with great pleasure that I forward you the Annual Report of the Department of Main Roads for the year ended 30 June 1988.

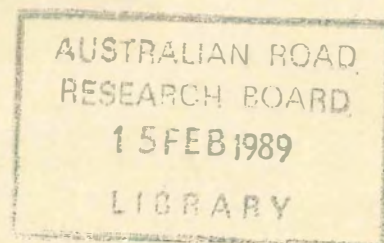
The Department of Main Roads has accepted the challenges of the tendering system and has worked closely with the private sector.

As a result of the expertise, skills and co-operation between Management and the workforce, a record program has been successfully undertaken during the past financial year.

The program of road, bridge, fishing facilities and associated activities played an important and integral role in the provision and maintenance of the State's assets.

I wish to extend to the Department and its employees and sub-contractors my heartiest congratulations on an excellent year's performance.

IAN M. BRAID, Minister.



OVERVIEW

In our Bicentennial year it is appropriate to review the Department's activities associated with the Bicentenary. These activities consist of the direct organisation and presentation of two officially recognised Bicentennial events, the cavalcade of road transport and the publication of the early history of roads in Tasmania in the form of the book 'Convicts & Carriaways' plus the administration and implementation of the Australian Bicentennial Road Development Program.

The ABRD Program was introduced by the Federal Government in 1982 as a special initiative to provide additional road funding for the construction of major much needed projects which could not proceed without an increase in road revenues. The Program was funded by a 2 cent/litre surcharge on fuel sales. Over the period of the Program, Tasmania will receive \$86.8m from the total revenue raised from the surcharge. In 1987-88 the success of the ABRD Program was demonstrated by the opening of major projects, the Glen Dhu Corridor, the Davey Street Extension, the Prospect Bypass and the Underwood Deviation on the Lilydale M.R.

The opening of the Prospect Bypass took place during the Australia Day long weekend and was the first ABRD project to be officially opened in Australia in 1988. This Nationally significant event was celebrated by staging a cavalcade of road transport history starting with a bullock team and ending with a solar powered vehicle.

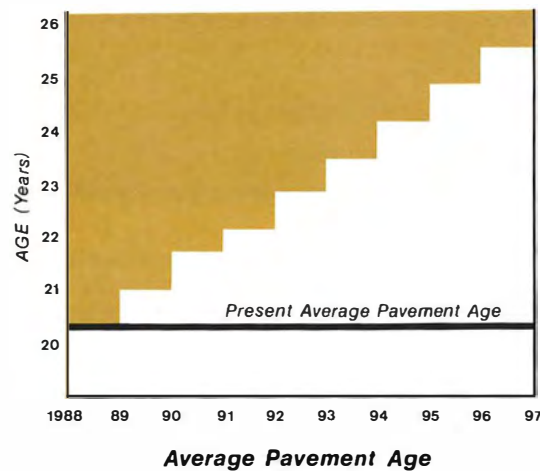
In Tasmania the ABRD grants have been used to fund the construction of major road improvements at Burnie, Prospect, Glen Dhu, Deloraine, Sullivans Cove—Hobart, Blackmans Bay and Royal Park—Launceston. Rural Arterial improvements have been completed, or are in progress, on the Arthur Highway south of Eaglehawk Neck, the Lilydale M.R. and the Mole Creek M.R. The program has provided funds for 83 Council Local Road projects and the construction of three large concrete bridges on Local Roads over the Inglis River at Wynyard, over the Jordan River at Brighton and over Lune River.

On 31 December 1988, the ABRD Act will end and the revenue raised from the 2 cent/litre fuel surcharge will be absorbed into the new Australian Centennial Road Development Program. In line with the Federal Government's financial policy of reducing public sector spending, road funding has been significantly reduced and Tasmania's road programs are being curtailed in line with the funding cuts. The value of Commonwealth Road Grants to Tasmania in 1987-88 values since the introduction of the ABRD Program is illustrated on page 10.

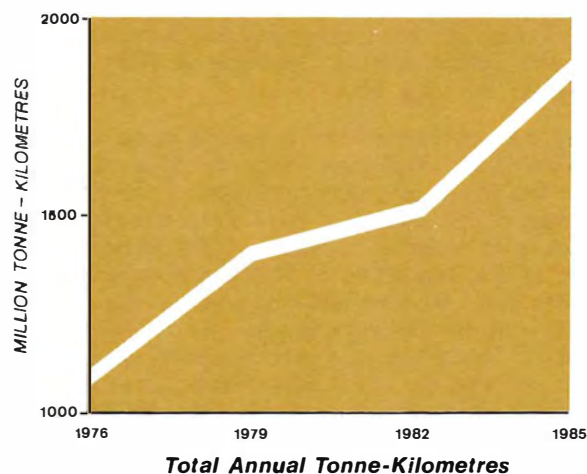
During 1987-88 good progress was maintained on programs being funded from the other principal sources of revenue, the Australian Land Transport Program, State funds derived mainly from motor tax and fuel franchise and from the Works and Services sector of the Consolidated Fund. This progress was marked by the official opening of the section of the Launceston Southern Outlet from Breadalbane to Strathroy and the completion and opening to traffic of the Mornington Interchange and Flagstaff Gully Link Road, the first stage of the duplication of Hobart's Southern Outlet south of Olinda Grove, and the Smithton Bypass. Further good progress was achieved on the duplication of the Bass Highway between the Forth River and Penguin, the Bellerive Bypass, Kings Meadows Connector, the duplication of the Brooker Highway north of Berriedale, the reconstruction of sections of the Huon, Tasman, Lyell and Arthur Highways, the construction of Guildford-Hampshire, the Que River to Learys Corner and the Falmouth-Chain of Lagoons Link Roads and the Smithton-Zeehan Corridor.

While the Department continued to plan for further major road upgrading works, such as a Midland Highway bypass of Brighton/Pontville, a new Bass Highway route from Launceston to Deloraine and a new Tasman Highway route from Lilydale to Scottsdale, continued reductions in the value of funding allocations place uncertainty on the implementation and/or completion of these important projects.

Important reports produced by the National Association of State Road Authorities and the Bureau of Transport and Communications Economics, and policy statements by the Federal Minister during the year, indicated two areas which should be given prominence for future road expenditure. First a high priority must be given to the maintenance of the ageing road network which generally has been designed for a pavement life of 20 years. The significance of this factor is shown in the diagram predicting the ongoing average age of Tasmania's sealed rural arterial road, assuming an upgrading rate of 40 km/annum.



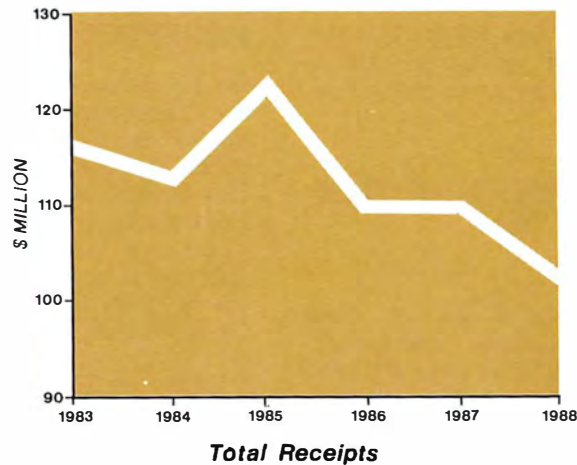
Secondly, the need to assist in the structural adjustment of the Australian economy by directing available funding to the upgrading of routes carrying large volumes of road freight, particularly that related to export industries, is considered to be important and the new Federal Australian Centennial Road Development Program will contain a road funding category of National Arterial Roads to assist this initiative. The increasing dependence of Tasmanian industries on road freight is illustrated by the graph of total tonne kilometres carried by commercial vehicles during the 1976 to 1985 period. In an effort to address the problem of the ageing rural arterial network, and the need to increase the length of pavement upgrading being achieved for a diminishing funding resource, the Department has critically examined its requirements for the upgrading of the rural arterial roads. During the period 1980-88 these works have concentrated on the older highly trafficked sections of the network such as the Huon Highway between Sandfly and Huonville, the Lyell Highway between New Norfolk and Gretna, and the Tasman Highway between Scottsdale and Derby. The works carried out included major realignments, widening and surface improvements. Deteriorating pavement conditions on arterials carrying large volumes of commercial traffic are now apparent on roads constructed during the 1960's, and the major improvements required relate to width and surface condition. A new restoration program, aimed at significantly reducing the upgrading costs and therefore increasing the length of works undertaken, will be initiated. The cost savings will be obtained by eliminating alignment improvements and concentrating on the provision of adequate width and surface conditions.



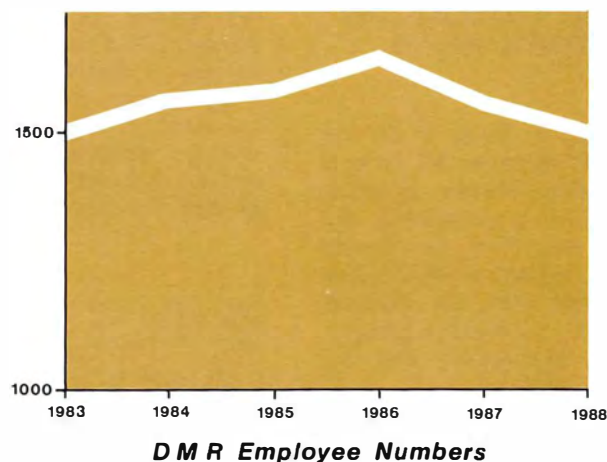
A further step in the management of the road network now being investigated is a review of road maintenance operations and the development of a pavement management system which will include a prediction of actual life expectancy from the various sections of road network.

While current programs generally include the substandard sections of the road network carrying high commercial vehicle numbers, a review of the State's road freight routes was undertaken at the request of the Federal Minister and a report submitted on the State's recommendations for projects to be included in the new National Arterial funding category. Discussions are continuing on the formulation of the National Arterial program.

In conjunction with the preparation of the report on proposals for National Arterials, the Department commissioned the Centre for Regional Economic Analysis of the University of Tasmania to assess the economic activity in Tasmania generated by roadworks. The study revealed that in 1987-88 the road construction industry, with a total expenditure in excess of \$170m, generated 6 750 jobs and \$232.4m into the State. This is a very significant contribution to the economy of Tasmania, being 3.5 per cent of total employment and 4.4 per cent of the Gross State Product.



Due to the reducing level of funding for DMR works, the direct employment of staff and award employees was reduced from 1 547 to 1 498 in 1987-88. This reduction was achieved entirely by natural attrition and details of the fluctuations in the workforce over the past five years are shown diagrammatically.



The activities and achievements recorded in this Annual Report have been due to the endeavours of a large number of people, mainly from within the Department, but also from outside. To all members of staff and employees of the Department of Main Roads, and to the contractors, consultants and staff of Council, State and Commonwealth Government Departments who have assisted the Department through the year I extend my personal gratitude for your contributions.

In conclusion I take this opportunity to extend special thanks to a small group of dedicated people who, over a period in excess of three years, made a significant contribution to the Department's major Bicentennial Project, the book 'Convicts & Carriageways'. The book has provided pleasure to many members of the staff and public, and demonstrates a wide diversity of skills which either are available or can be assembled by a modern Roads Department.

(P. J. Wettenthal)
DIRECTOR OF MAIN ROADS

HIGHLIGHTS OF THE YEAR

Official opening ceremonies, both the formal type and the less elaborate 'soft' openings were a feature of the Department's publicity and public relations activities.

LAUNCESTON SOUTHERN OUTLET ROAD—STRATHROY TO BREADALBANE

The new 4.7 km section of divided dual carriageway and the Breadalbane roundabout linking it with the Midland Highway were officially opened on 28 August 1987 at a total cost of \$6.632m. The opening ceremony was performed jointly by the Hon. Peter Duncan, MP, Federal Minister for Land Transport and Infrastructure Support and the Premier, the Hon. R. T. Gray, MHA. About 230 guests later attended a morning tea at the Evandale Memorial Hall.

HOBART SOUTHERN OUTLET, MT NELSON TO PROCTORS ROAD UNDERPASS

A 1.7 km section, which is Stage I of the duplication of the Outlet Road from Mt Nelson to Kingston, was completed in October. In order to keep traffic disturbance to a minimum, the Minister for Main Roads (the Hon. Ian Braid, MHA) officiated at a 'soft' opening on 14 October 1987. Among those present were the Minister for Transport (the Hon. N. C. Evers), the Director of Main Roads (Mr P. J. Wettenhall) and the Deputy Director (Mr A. H. Wilson).

TASMAN HIGHWAY/DAVEY STREET EXTENSION

Stage I, from Hunter Street to Park Street was opened to traffic in June without formalities, to avoid traffic disturbance. Stage II, the construction of a dual carriageway extending the Tasman Highway in the vicinity of Davies Avenue to the beginning of Brooker Avenue, was completed in July. The total combined cost was \$7.376m, including acquisitions and works by other authorities. Although this section was opened to traffic in July, the official opening was performed jointly on 16 October 1987 by the Hon. P. Duncan, MP and the Hon. Ian Braid, MHA. The official party also included the Lord Mayor, Alderman Doone Kennedy and the Director of Main Roads.

PROSPECT BYPASS

On 23 January 1988 the Bass Highway link to the Launceston Southern Outlet, was jointly opened by the Premier and Mr Duncan Kerr, MHR, on behalf of the Commonwealth Minister. This function was attended by a large number of Parliamentary, Local Government, Civic and Community guests. The bypass is 3 km long and was built at a cost of \$6.9m being funded almost wholly from the Australian Bicentennial Road Development Scheme.

As this was the first Bicentennially-funded road project to be opened anywhere in Australia in the Bicentennial year it was considered that some other event should be included, to give it greater public significance. A Cavalcade of the History of Road Transport was the result, with the whole event being granted official endorsement as a Bicentennial activity.

After the official opening, more than 100 vehicles representing all eras and modes of road-going transportation used in the State were paraded through a ceremonial arch near the Velodrome. They ranged from a bullock team to a solar powered developmental vehicle. Most of the vehicles proceeded to Entally House to be displayed during the reception in the stable-yard of that National Trust property.



GLEN DHU CORRIDOR

This 1 km section, constructed at a cost of \$10.954m, was the final link in the 14 km, Launceston Southern Outlet Road/Prospect Bypass project.

The joint opening on 24 May 1988 was performed by the Hon Ian Braid, MHA, Minister for Main Roads and his Commonwealth counterpart, the Hon Peter Morris, MHR.

Approximately 200 guests who attended were drawn from all levels of government, as well as community and civic representatives. The opening attracted considerable media attention. It was followed by a reception at the International Velodrome.



79TH NAASRA AND 55TH ARRB DIRECTORS' MEETINGS

Directors of the National Association of State Road Authorities (NAASRA), who also are Directors of the Australian Road Research Board (ARRB), convened in Tasmania for their November meetings.

The Director or Commissioner of each State Road Authority is, by virtue of his office, a member of both NAASRA and ARRB, as is the Director of the Department of Transport and Works, A.C.T. and the Associate Secretary of the Federal Department of Transport and Communications.

Each State or Territory in turn is host to the main NAASRA and ARRB meeting each year.

On 31 October the Minister for Main Roads (Mr Ian Braid) welcomed the party to Tasmania. They then inspected various types of roads which demonstrated the physical and climatic constraints on road construction in Tasmania.

The NAASRA meeting was officially opened on 2 October by the Minister. The Warden and Councillors of the Municipality of Lyell hosted a reception for delegates and their wives that night. After more guided tours by the HEC representatives, including the King River tunnelling project, the party travelled to Hobart.

On 4 November the ARRB meeting was held at Head Office, followed by a State dinner at Parliament House.

DEPARTMENTAL REPRESENTATION ON NAASRA

Peter Wettenhall, Director of Main Roads is a NAASRA Director

Ross Read, Assistant Director, Administration
Member, Administration and Finance
Management Committee

Tony Wilson, Deputy Director
Member, Technical Management
Committee

In addition 15 members of DMR staff acted as Contact Officers for NAASRA Committees.

'CONVICTS & CARRIAGEWAYS'

The Department's major Bicentennial project was the production of the book 'Convicts & Carriageways' which is a history of Tasmanian road development to 1880.

The book contains over 300 illustrations both in colour and black and white. It includes reproductions of famous paintings and some previously unpublished works from private collections.

The publication is the result of more than three years research from archives, libraries, museums, art galleries and private sources. The research was carried out by the Department's Historical Committee, including:

Messrs P. J. Wettenhall, L. J. Baily, R. F. Read, R. A. Rallings, I. J. Pook, G. M. Nichols, K. W. Tacey and Mrs L. G. Newitt.

The text was written by Mrs Newitt, edited by Mr A. Jones and the book was designed and produced by Mr Pook. The Australian Bicentennial Authority endorsed the book as a Bicentennial Activity and authorised the use of its logo.

The book was officially launched by the Minister for Main Roads, the Hon. Ian Braid, MHA at a function on the banks of the Coal River at Richmond on 15 June 1988. The colourful ceremony attracted a high level of media attention.

FINANCE

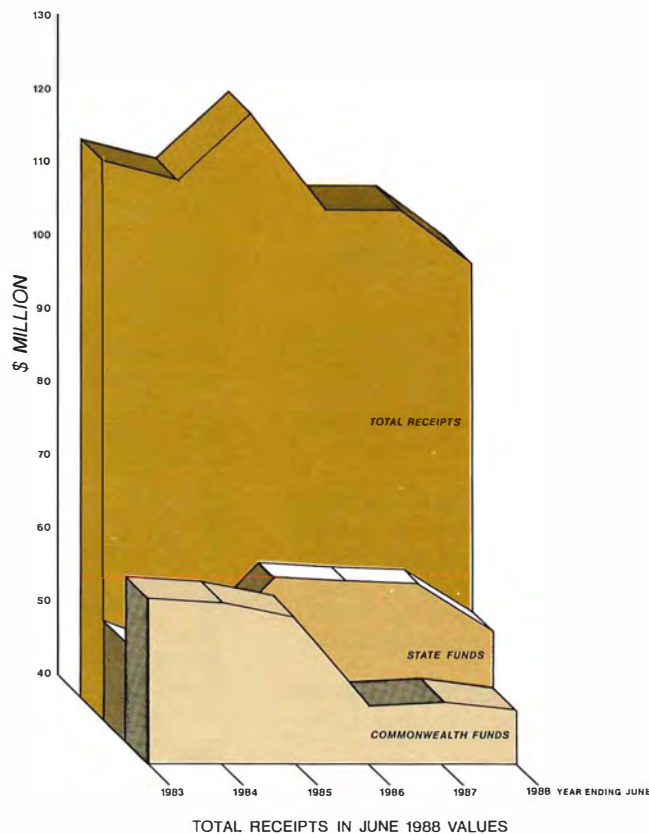
COMMONWEALTH/STATE FINANCIAL RELATIONS

The 1987-88 financial year was the last full year of road funding under the Australian Bicentennial Road Development Trust Fund Act 1982 (ABRD) and the Australian Land Transport (Financial Assistance) Act 1985 (ALTP). As the ABRD program terminates on 31 December 1988 the Commonwealth Government has announced that both Acts will terminate and road funding will be brought under the umbrella of a new Act known as the Australian Centennial Road Development Act. Consequently the amended allocations of funds resulting from the Cameron Committee enquiry, operated for only one year.

Over the past three years, Commonwealth road grants for Tasmania, were lower in actual dollar amounts than the 1984-85 level of funding. In real terms, the reduction in funding was very substantial, each year being in excess of \$11m less than the 1984-85 level. This amounted to a sustained reduction of 20 per cent in Commonwealth Government funding in constant June 1988 values.

From 1984-85 State generated funds for roads have exceeded Commonwealth Government grants, including special grants for the Bowen Bridge, by \$32m in actual dollar amounts.

The graph illustrates the trends in Commonwealth and State funding for roads.

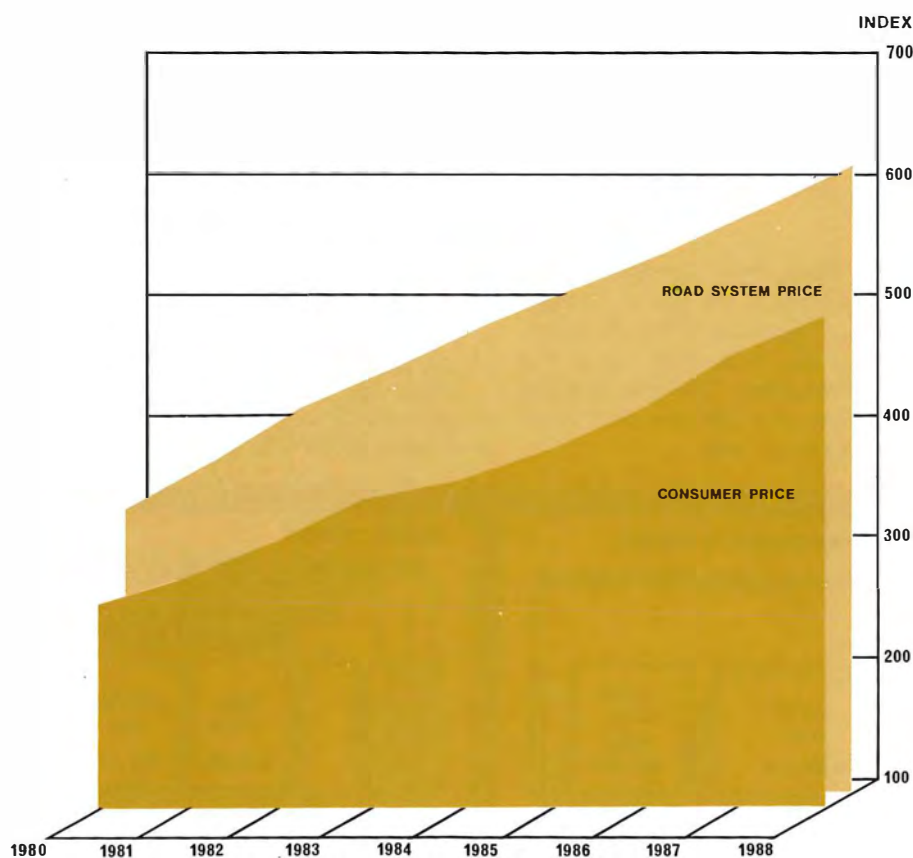


INFLATION

The Department monitors the rising cost of its operations by the use of a Road System Price Index. This is a composite index produced by combining indices for road construction, road maintenance and bridgeworks.

During 1987-88 the road system index rose by 6.1 per cent while the Consumer Price Index rose by 6.6 per cent. There were wide fluctuations in price increases during the year. The prices of some types of drainage pipes increased by 21 per cent. The cost of bitumen remained unchanged except for delivery charges which increased marginally, whilst salaries and wages increased by around 5 per cent.

A comparison between the Road System Price Index and the Consumer Price Index, adjusted to the same base year is shown below.



COMMONWEALTH GRANTS FOR ROADS

The Commonwealth provided financial assistance to the States for roads in the financial year 1987-88 under the Australian Land Transport (Financial Assistance) Act 1985, the Australian Bicentennial Road Development Trust Fund Act 1982 and the Interstate Road Transport Act 1985. The total grants to Tasmania were \$46 764 912 made up as follows:

Construction and Maintenance	A.L.T.P. Act 1985	A.B.R.D. Act 1982	I.R.T. ACT 1985
	\$	\$	\$
National Roads . . .	11 393 319	7 020 817*	....
Rural Arterial Roads	4 200 000	3 557 300*	21 276†
Urban Arterial Roads	3 600 000	5 240 000*	....
Local Roads	9 300 000	2 432 200*	....
	28 493 319	18 250 317	21 276

* For road construction purposes only.

† For road maintenance purposes only.

Commonwealth funds will be received from four sources during the 1988-89 financial year. These are:—

- Australian Bicentennial Road Development Trust Fund Act 1982
- Australian Land Transport (Financial Assistance) Act 1985
- Interstate Road Transport Act 1985 and
- the proposed Australian Centennial Road Development Act.

SPECIAL COMMONWEALTH FUNDS

Gordon River Power Development Compensation funds provided by the Commonwealth amounted to \$489 892 as compared with \$86 993 in 1986-87.

ROAD FUNDS FROM STATE RESOURCES

Motor Taxation—receipts amounted to \$19 112 788 as compared with \$18 452 112 in 1986-87, an increase of 3.58 per cent.

Public Vehicle Fees—fees collected during the year amounted to \$233 207 as compared with \$179 505 in 1986-87, an increase of 29.92 per cent.

Petroleum Products Business Franchise Licence Fees—receipts amounted to \$18 640 123 as compared with \$18 462 657 in 1986-87, an increase of 0.96 per cent.

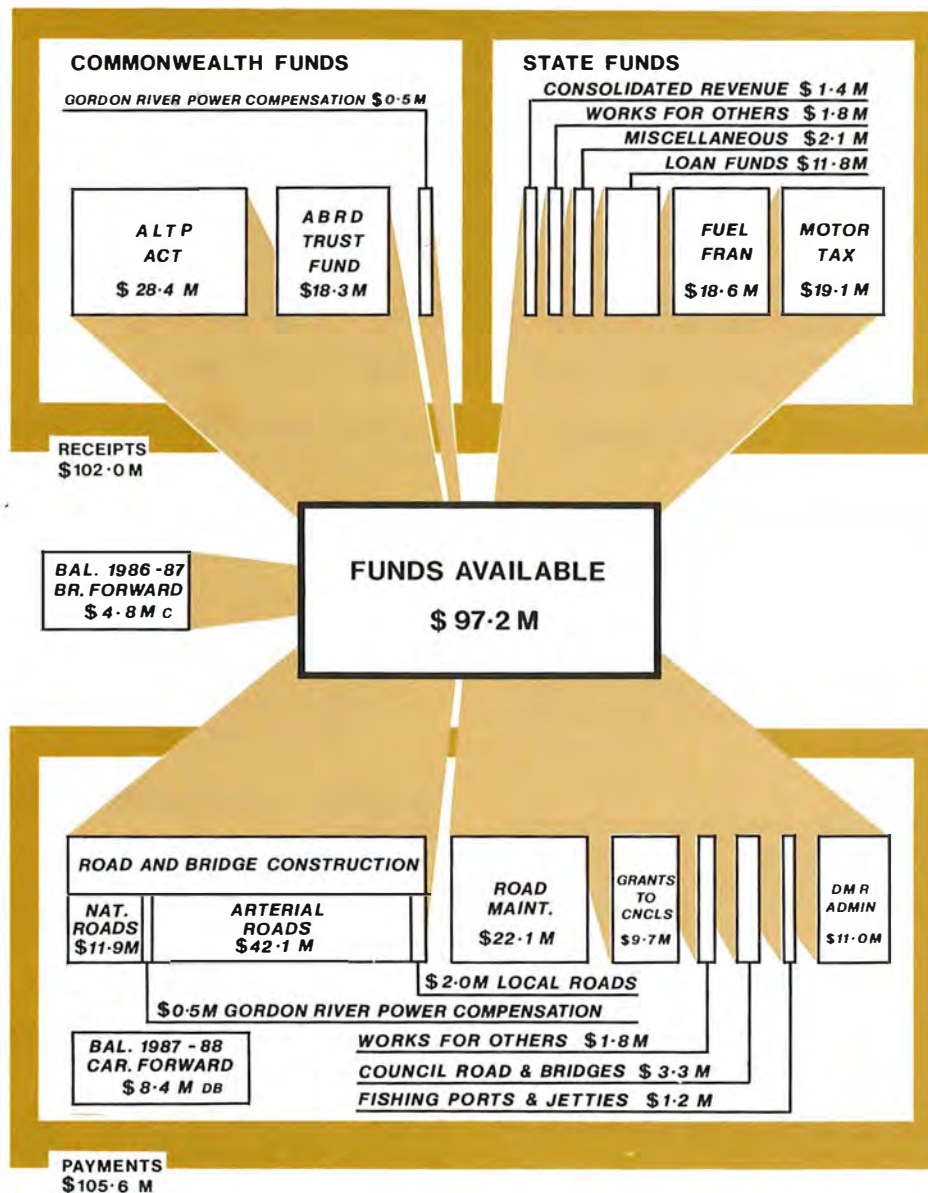
Consolidated Fund—Works and Services—funds provided to the Department for roads, bridges and associated works, upgrading of fishing ports, jetties and facilities for fishermen and the Launceston Flood Protection Scheme totalled \$11 820 000 a decrease of 27.48 per cent when compared with the previous year.

FUNDS PROVIDED BY OTHER DEPARTMENTS AND AUTHORITIES

Payments received by the Department for works and services carried out for other Departments and Authorities amounted to \$1 838 994 as compared with \$2 592 146 in 1986-87. The Department was involved with minor works for the Construction, Education, Forestry, Health, Housing, Lands, Parks and Wildlife and Transport Departments, Hydro-Electric Commission and Metropolitan Water Board.

STATEMENT OF SOURCE AND APPLICATION OF FUNDS

As shown in the following statement, the funds obtained during 1987-88 from all sources amounted to \$105 909 551 compared with \$105 828 789 in 1986-87.



RECEIPTS & PAYMENTS 1987-88

SOURCE OF FUNDS

1986-87		1987-88
\$		\$
38 249 173	State Motor Taxation, Public Vehicle Fees, Fuel Franchise and Miscellaneous Receipts	39 776 158
45 641 896	Commonwealth Grants for Roads	46 764 912
16 300 000	Consolidated Fund—Works and Services	11 820 000
148 054	Special Commonwealth Funds	491 803
991 993	Consolidated Fund—Recurrent Expenditure	1 591 924
2 592 146	Funds Provided by other Departments and Authorities	1 838 944
1 905 527	Net decrease in funds carried forward	3 625 810
105 828 789	TOTAL	105 909 551

APPLICATION OF FUNDS

1986-87		1987-88	
\$		\$	\$
	State Highways Trust Fund—		
87 625 635	Roadworks . . . . .	....	89 164 696
11 610 645	Bridgeworks . . . . .	....	11 175 379
99 236 280			100 340 075
	Other Consolidated Fund Works and Services Expenditure—		
940 000	Administrative Costs Refunded to Consolidated Fund	650 000	
359 882	Jetties and Facilities for Fishermen	489 420	
200 000	Launceston Flood Protection Scheme	200 000	
1 360 434	Upgrading of Fishing Ports	307 385	
2 860 316			1 646 805
	Special Commonwealth Funds—		
60 901	Second Hobart Bridge . . . . .	....	
160	Community Employment Program	1 911	
86 993	Gordon Below Franklin Alternate Works	489 892	
148 054			491 803
	Consolidated Fund Recurrent Expenditure—		
224 502	Departmental Administration	226 343	
463 337	Workers' Compensation (Other Departments)	463 814	
116 039	Repairs to Jetties and Facilities for Fishermen	132 553	
188 115	Other Miscellaneous Expenses	769 214	
991 993			1 591 924
2 592 146	Works for other Departments and Authorities . . . . .	....	1 838 944
105 828 789	TOTAL . . . . .	....	105 909 551

STATE HIGHWAYS TRUST FUND

The State Highways Trust Fund Account is established under the Roads and Jetties Act 1935 and generates the major portion of the activities, and hence, expenditure of the Department. The fund is credited with the following:

- all grants made by the Commonwealth under the Australian Land Transport (Financial Assistance) Act 1985, the Australian Bicentennial Road Development Trust Fund 1982 and the Interstate Road Transport Act 1985
- all State motor taxation
- public vehicle fees imposed under Section 20A of the Traffic Act 1925
- contribution by Municipal Councils for the maintenance of classified roads
- receipts from sale of stores (other than plant)
- any moneys provided by Parliament for the purposes of the fund
- profits on contracts awarded to the Department
- such other moneys (if any) as the Treasurer may direct

The fund is debited with the following:—

- expenses incurred in the construction, reconstruction and maintenance of State Highways and other classified roads
- costs incurred in the maintenance of Council roads which the Minister has agreed to subsidise
- contributions to the Bruny, Flinders and King Island Municipalities of portion of the Motor Tax collected in those Municipalities
- all expenditure incurred under the provisions of the Australian Land Transport (Financial Assistance) Act 1985, the Australian Bicentennial Road Development Trust Fund Act 1982 and the Interstate Road Transport Act 1985
- costs of stores and materials (other than plant)
- repair and renewal of bridges on Council roads

A draft statement of receipts and payments for the State Highways Trust Fund Account for 1987-88 is attached, together with the corresponding figures for 1986-87.

During the 1987-88 financial year the sum of \$167 142 was transferred from the Department's Contract Ledger to the State Highways Trust Fund. This transfer was in keeping with a decision made by the Department to use the cash flow generated by its contract activities to assist in meeting the planned objectives of the Department.

The profit figure transferred represents the balance in the operational account for the various contracts at the 30 June 1988. The figure cannot be used as an indication of the likely outcome of the contracts because credits for claims and variation orders and debits for actual costs of the works are being processed daily. The significant indicator is the total transferred which displays a positive cash flow in the account.

STATEMENT FOR THE YEAR ENDED 30 JUNE 1988

1986-87 \$		1987-88 \$
	Receipts	
(2 881 154)	Balance brought forward, 1 July	(4 786 681)
45 641 896	Commonwealth Grants for roads	46 764 912
18 452 112	Motor Taxation	19 112 788
179 505	Public Vehicle Fees	233 207
18 462 657	Petroleum Products Business Franchise Licence Fees	18 640 123
15 360 000	Consolidated Fund—Works and Services	11 170 000*
51 778	Second Hobart Bridge .....	.....
767 422	Consolidated Fund—Recurrent Expenditure	1 364 763
229	Community Employment Program	2 730
86 993	Gordon River Power Development Compensation	489 892
1 154 900	Miscellaneous Receipts	1 790 040
97 276 338	TOTAL	94 781 774
	Payments	
	Roads and Bridgeworks—	
23 921 929	National Roads	18 500 034
56 385 634	Arterial Roads	63 909 051
18 928 718	Local Roads	17 930 990
	Associated Works—	
51 778	Second Hobart Bridge .....	.....
1 836 355	Water Transport Facilities	929 359
651 383	Miscellaneous Consolidated Fund Expenditure	1 232 210
200 000	Launceston Flood Protection	200 000
229	Community Employment Program	2 730
86 993	Gordon River Power Compensation Expenditure	489 892
102 063 019		103 194 266
(4 786 681)	Balance carried forward 30 June	(8 412 492)
97 276 338	TOTAL	94 781 774

Total funds received from the Consolidated Fund for Works and Services during the financial year ended 30 June 1988 totalled \$11 820 000. Of this sum the amount of \$650 000 was applied as a reduction to the Department's administration costs, leaving the balance of \$11 170 000 available for construction projects.

CONSOLIDATED FUND—WORKS AND SERVICES EXPENDITURE

The works and services funds of \$11 820 000 allocated to the Department for roads, bridges and other works, were applied as follows:

1986-87 \$		1987-88 \$
14 379 684	Roads and Bridges	10 823 195
1 920 316	Other Works	996 805
16 300 000	TOTAL	11 820 000

A schedule of expenditure items and amounts is shown in Annexure A. It should be noted that the amounts for the road and bridge items listed in the schedule were in most cases supplemented by funds from the State Highways Trust Fund.

FINANCIAL ASSISTANCE TO LOCAL GOVERNMENT AUTHORITIES

Under the provisions of the Australian Land Transport (Financial Assistance) Act 1985, the Australian Bicentennial Road Development Trust Fund Act 1982 and the Roads and Jetties Act 1935, the Department made direct grants to local government authorities based on a formula approach for construction and/or maintenance of local roads and approved projects for arterial roads controlled by Councils. Following the Cameron Report, Commonwealth grants to Councils under the Australian Land Transport (Financial Assistance) Act 1985 were substantially decreased. The State Government agreed to forego its share of the distribution for local roads under the formula amounting to \$432 940, in order to lessen the effect on Councils of the reduction in funds. Even so, the direct grants to Councils totalled \$9 688 344, a decrease of 10.80 per cent to the amount of the direct grants provided in 1986-87.

In addition to the direct grants, the Department also provided indirect financial assistance to local government authorities. Under the provisions of the Roads and Jetties Act 1935 the Department financed and carried out the repair and renewal of bridges on Council roads. The Department maintained four Council Roads which have been declared as subsidised roads and provided funds to the Department of Lands, Parks and Wildlife for work on some local roads. During the year, the Department performed roadworks for the Municipality of Clarence, in relation to the Flagstaff Gully Link Road. The indirect financial assistance to Councils totalled \$3 329 648, an increase of 17.47 per cent on the preceding year.

The total of direct grants and indirect financial assistance to Councils was \$13 017 992 a decrease of 4.95 per cent on 1986-87. The amounts of direct grants and indirect financial assistance to Councils for the various categories of roads and works are shown in Annexure B.

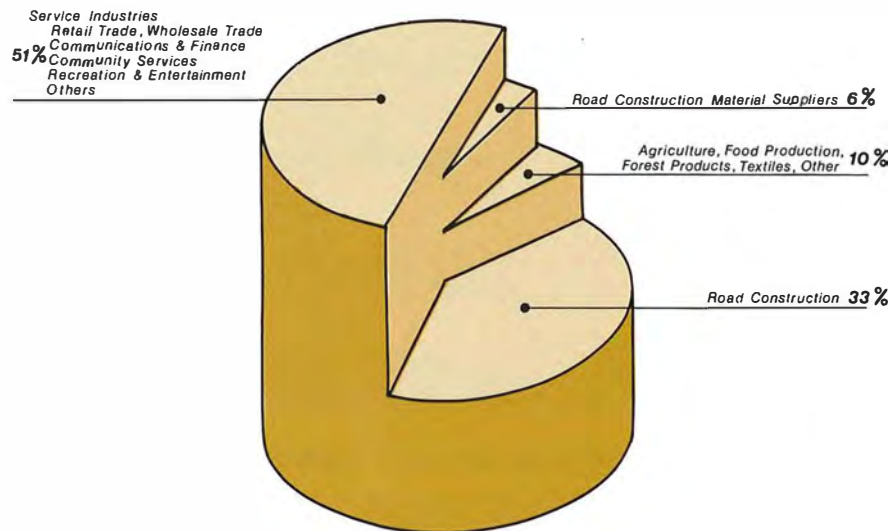
ECONOMIC RESEARCH

The Department engaged the Centre for Regional Economic Analysis, University of Tasmania (CREA) to undertake a study to assess the economic activity in Tasmania generated by road construction.

The study found that in 1987-88 the road construction industry generated 6750 jobs in Tasmania and contributed \$232.4m to the Gross State Product. By far the most jobs were created in service industries. Over 1 000 jobs for example were in retail trade, 870 in communications and finance and 600 in wholesale trade.

The study also examined the effect of a reduction in road funding. If the State suffered a 10 per cent reduction in Commonwealth funding for roads, then 186 jobs would be lost. Importantly, the study found that the effects of a loss of Commonwealth funding could not be negated if the State made up the short fall in road funds by increased taxes or increased allocations of loan funds. In either case, approximately 135 jobs would still be lost.

Another important result from the study showed that road construction created more jobs than any other works using State capital funds. If 10 per cent of State funds used for roadworks were transferred to other capital projects, a loss of 65 jobs could be expected.



EMPLOYMENT CREATION
RESULTING FROM ROAD CONSTRUCTION
1987/88

MAJOR PROJECTS

MAJOR ROAD WORKS COMPLETED

<i>Road</i>	<i>Section</i>	<i>Cost \$m</i>
NATIONAL ROADS		
North East District		
Southern Outlet	Breadalbane to Strathroy	6.632
Bass Highway	Prospect Bypass	5.498
East Tamar Highway	Widening from Bell Bay Turn-off to Four Mile Creek	1.487
North West District		
Bass Highway	Mole Creek Connector	1.172
	Forth River to Ulverstone Bypass—Roadworks Stage 1	2.828
URBAN ARTERIAL ROADS		
South East District		
Tasman Highway	Davey Street Extension Stage 1 }	7.376
	Davey Street Extension Stage 2 }	
Brooker Avenue	Derwent Park Road Intersection Stage 1	0.587
North East District		
Southern Outlet	Glen Dhu Corridor	10.954
RURAL ARTERIAL ROADS		
North East District		
Tasman Highway	Ringarooma Main Road to Legerwood River ..	1.954
West Tamar Highway	Legana to Muddy Creek and Brady's Lookout Climbing Lane	2.409

MAJOR BRIDGEWORKS COMPLETED

<i>Bridge</i>	<i>Road and Section</i>	<i>Cost \$m</i>
NATIONAL ROADS		
North West District—		
Mole Creek Connector		
Underpass	Bass Highway—Deloraine Bypass	0.762
URBAN ARTERIAL ROADS		
South East District—		
Mornington Interchange		
Overpass	Bellerive Bypass	1.184
Snug Creek Bridge	Channel Highway	0.190
RURAL ARTERIAL ROADS		
North West District		
Pumicestone Creek Bridge	Lake Highway—Golden Valley to Breona	0.138
Wey River Bridge	Guildford—Hampshire Link Road	0.419

OTHER WORKS COMPLETED

URBAN ARTERIAL ROADS		
North East District		
Hope Street Sewer Outfall		
Remedial Works	East Tamar Highway	0.248

DIVISION REPORTS

ROAD CONSTRUCTION AND MAINTENANCE

Road Maintenance

Expenditure figures for the financial year 1987-88 for each District are summarised as follows:

	South East	North East	North West	Total
	\$m	\$m	\$m	\$m
Routine Maintenance	4.036	3.309	3.594	10.939
Reseals and Overlays	1.239	2.911	1.286	5.436
Total	5.275	6.220	4.880	16.375

Routine maintenance continued at a satisfactory level throughout the State, assisted by the ongoing program of rehabilitation works which relieved the high maintenance cost burden of the road lengths involved.

Rehabilitation Works

South East

Boyer Secondary Road near Dromedary
Lake Highway—Steppes to Miena (continuing)
Lyell Highway—Norton Manderville to Ouse (continuing)
Fenton Main Road—Westerway to National Park (continuing)

North East

West Tamar Highway—Exeter to Batman Developmental Road (continuing)
Tasman Highway—Brid River to Sideling (continuing)
Bridport Main Road—Scottsdale to Bridport (continuing)
Frankford Main Road (continuing)
Lady Barron Main Road (continuing)

North West

Bass Highway—Cassidys Bay to Rocky Cape Road (continuing)
Lyell Highway—Victoria Valley Turn-off for 6 km south (continuing)
Waratah Main Road—Murchison Highway to Luina (continuing)
Marlborough Highway (continuing)
Tree Secondary Road (continuing)
Nugent Main Road

New Plant

Sealing operations benefited from the purchase last year of the two new 'Matthews' bitumen sprayers. Sealing and asphalt overlay activities will be further enhanced with the ordering in 1987-88 of a new mobile asphalt plant and a 25 000 litre electrically fired bulk bitumen mobile storage tanker. These units will be commissioned in time for the 1988-89 sealing season.

Two new 4WD multi purpose tractors were purchased for the maintenance organisation and are stationed at the Derwent Bridge and Fingerpost Depots. It is expected they will increase snow clearing efficiency during the short snow season and provide the versatility required for other maintenance activities.

Transfer to Councils

In 1987-88 there was increased involvement in negotiations with a number of Councils relating to the handover of State roads superseded by recent construction works.

These include:

- Bass Highway—through Smithton (superseded by Smithton Bypass)
- Bass Highway—Westbury Road (superseded by Prospect Bypass)
- Midland Highway—Strathroy to Breadalbane (superseded by Launceston Southern Outlet)
- Lilydale Main Road—through Underwood (superseded by Underwood Deviation)

and several other roads throughout the State which were not finalised previously. It is expected that many of the negotiations will be concluded in the near future.

Two major items that were successfully concluded are the division of maintenance responsibilities on the Burnie Expressway and Launceston's Glen Dhu Corridor.

Pavement Management System

The year saw the commencement of research towards the establishment of a Pavement Management System suitable to the Department, to monitor the effects of routine maintenance on pavement condition and to assess pavement performance related to its construction and the terrain it traverses.

The aim is to develop prediction models as a tool to assist with the long term strategic planning for pavement rehabilitation, and the optimisation of expenditure of the maintenance dollar.

Project Control Management System

Consultants Touche Ross have been appointed to assist the Department in the establishment of a new computer based system which will provide management with timely information covering expenditure and progress on all major projects and provide a data base of historical costs to assist with forward planning. To date the specifications have been completed for the system which is expected to be operating early in the new financial year.

PLANNING AND TRAFFIC

National Arterial Roads

As part of the Department's submission to the Federal Government for the proposed National Arterial Roads, a study was undertaken of the major inter-regional roads within the State. Upgrading proposals for these roads were assessed in terms of the changes in the level of service they would generate when compared with the existing level. An economic assessment of the projects was also undertaken, including the benefits deriving from the introduction of B-doubles on specified routes. The projects were then ranked in order of cost/benefit ratio. The projects which were rated most highly were:

Tasman Highway—Launceston to Scottsdale

Bass Highway—Burnie to Somerset

Tasman Highway—Black Charlies Opening to Orford

East Tamar Highway—Alanvale to Barnards Creek

Brooker Highway—Berriedale to Granton

Tasman Highway—Mornington to Airport Turnoff

Environmental Studies

The Geographer-Planner continued to give specialist advice to project engineers in both the Design and Planning Divisions on the environmental impact of their proposals. In addition, his wide-ranging activities covered the following areas:

- Supervision of specialist consultants employed in botanical and archaeological studies
- Membership of the NAASRA Working Group on Road Traffic Noise dealing with 'The Implications of Mandatory Noise Levels'. This Group issued its draft report this year
- Liaison with scientific specialists in other areas of the State Service and dissemination of material within the Department

- Building up and holding inventories dealing with scientific specialities across the State and subsequent advice to DMR officers as to where these matters should be considered

Traffic Services

Activities of this section included maintenance of the road data base, traffic investigations, traffic simulation studies and traffic counting.

Investigations were undertaken into allegedly hazardous locations and remedial treatment was recommended.

The traffic simulation program known as TRARR was introduced. A study was in progress on selected sections of the Midland Highway to assess potential sections for provision of an auxiliary lane.

Automatic electronic systems completely replaced the mechanical and electro-mechanical units formerly used in traffic counting. They include two ARRB systems, Culway, a weighing in motion system and TRARR.

Planning and Development Services

The Section's work was governed largely by the policy of making Local Government more responsible for planning and development decisions.

Dealing with land use planning issues alongside State Roads involved subdivision and development applications and proposals, as well as advice and commentary on new legislation, planning schemes and associated issues. The table below shows a comparison between the years ending 30 June 1987 and 30 June 1988.

	1986-87	1987-88
Subdivision Matters.....	351	254
Development Matters.....	....	115
Planning Scheme Matters.....	63	138
Miscellaneous Matters.....	14	37

All categories show an increase but there was a significant change in the number of planning scheme matters.

ROAD DESIGN

Computer Aided Design

The MOSS design system was being used on approximately 50 per cent of the current design projects. This was determined largely by the type of survey available and the level of staff training. Work was completed by the MOSS agent TRITEK on writing a programme, TASREP, to facilitate the production of setting out details from MOSS design models.



BROOKER HIGHWAY
Derwent Park Road Roundabout



BROOKER HIGHWAY
Berriedale Road to Abbotsfield Road



TASMAN HIGHWAY
Davies Avenue Underpass

Departmental Displays

A public display of the proposed bypass of Perth by the Midland Highway was held at the Perth Police Station from 6-8 July.

A public display of the proposed bypass of Brighton-Pontville by the Midland Highway was mounted at the Brighton Municipal Chambers from 2-23 December.

Road Direction Signing

Signing was upgraded along sections of the State Road network affected by roadworks, mainly in the vicinity of Hobart and Launceston.

'Overtaking Lane "X" km Ahead' signs were erected for all overtaking lanes on the National Highway in the North West. Road kilometre signs were erected at 5 km intervals on the National Highway between Hobart, Launceston and Burnie.

Tourism Signing

Decisions of the Tourist Signs Advisory Council (TSAC) resulted in the Department's continuing heavy involvement in tourism signing. A mechanism for the removal of illegal signs was still unresolved.

Autocad

An AUTOCAD drafting system was installed in the Traffic Design Section. Staff were continuing to receive training and good progress was achieved in the automation of the system which eventually will be used in the preparation of signs and linemarking drawings.

Vehicle Permits

A total of 2 940 permits was issued for the movement of overweight and/or overdimensional vehicles during the year, compared with 3 214 permits issued during 1986-87. An increase in the number of period permits issued resulted in a lesser number of permits being issued for individual movements.

Weighbridges

Bell Bay

A new 5 m × 3.5 m concrete deck in-ground electronic weighbridge was installed at Bell Bay as a replacement for the old installation.

Longreach

The existing weighbridge was converted from mechanical type to hybrid type in an effort to reduce damage resulting from vandalism.

Ulverstone

A new 6 m × 4.8 m hybrid weighbridge was purchased and a site prepared. Installation was to take place in 1988-89.

Brooker Highway

The new weighbridge replacing the unit formerly on the Hobart docks was brought into operation.

BRIDGE DESIGN

Hydraulics Section

Launceston Flood Protection Scheme

The Department continued to provide engineering liaison and audit of expenditure of State Funds for design and construction works undertaken by the City of Launceston. These works derive from the State's responsibility under the 1975 Agreement to make good serious structural failure and to raise the earth levees to their design height.

Continuing settlement of the levees and associated drainage outfalls and bridge and flood gate wing walls necessitated expenditure as follows:

	\$m
Carry over expenditure 1986-87.....	0.041
Reconstruction of Forster St. Wingwalls	0.032
Top up King's Wharf earth levee	0.054
Top up Scottsdale levee—Vermont Rd to Forster St	0.041
Stage I of Mowbray Levee Reconstruction	0.068
Expenditure carried forward to 1988-89 less ...	0.036
	<u>0.200</u>

Funding again was assisted by a 40 per cent contribution from the Commonwealth Government under the Federal Water Resources Assistance Program.

Road Drainage and Flood Protection

Some 27 km of classified roads were inspected and investigated for preliminary hydraulic assessment. Principal routes in this category were Exeter Bypass, the bypass of Lilydale on the proposed Tasman Highway and Rokeby to Lauderdale.

Detailed hydraulic report and design was prepared for 42.8 km of classified road, principally Huon Highway, Franklin; Bass Highway, Pateena Road to Illawarra Main Road; Lyell Highway, Donaghys Hill to Raglan Creek; Esk Main Road, Ormley Deviation; Tasman Highway, Falmouth; Reeve Street Connector, Burnie; Fenton Main Road, Tyenna; Bass Highway, Lovett Street Interchange; Arthur Highway, McManus Hill to Oakwood.

Investigations to determine the sizing of bridge openings were conducted with the principal bridges being Pieman River Bridge on the Smithton to Zeehan Road, Tyenna River Bridges on Fenton Main Road, Coal River Bridge on Fingerpost Road and George River Bridge on Binalong Bay Road. Assessments for the sizing of 51 timber bridges were made. These were predominantly on Council roads and were concentrated in the south of the State.

Hydraulic investigations were carried out into a range of drainage issues related to the classified road network. These included a number of complaints from landowners and members of the public with properties affected by road drainage. A review was undertaken of stormwater discharge from five proposed subdivisions near classified roads.

Several queries were received concerning works under construction which had been designed by consultants to the DMR. In some cases remedial action was indicated and the necessary design was prepared.

Cynthia Bay Jetty, Lake St. Clair

Construction of a 40 m long jetty for recreational and charter boat use was completed as well as extension of an existing boat ramp at Cynthia Bay. The work was undertaken for the Department of Lands, Parks and Wildlife at a total cost of \$154 000.

Jetties, Slipways and Fishing Facilities

An amount of \$132 000 was expended on the maintenance of State Jetties and Slipways as follows:

	\$
Minor, Miscellaneous and Emergency Repairs	7 894
General Maintenance of State Slipways	5 939
St. Helens Point Navigation Light	423
Port Davey Navigation Light	2 297
Stanley Fishermens Dock	29 430
Bruny Island Ferry Berths	18 087
Opossum Bay Jetty	7 232
Dennes Point Jetty	1 481
Gordon Jetty	16 201
Bridport Landing Stage	54
Coles Bay Landing Stage	9 908
Bicheno Landing Stage	4 287
Southport Jetty	17 934
Strahan Fishermens Jetty	7 097
Deepwater Jetty, Triabunna	2 058
South Arm Jetty	266
Pirates Bay Jetty	713
Swansea Jetty	1 251
	132 555

Darlington Jetty, Maria Island

Construction of a 24 m jetty extension and strengthening were completed at a total cost of \$200 000, of which \$169 000 was expended in 1987-88. Works included the installation of precast reinforced concrete panel fendering along the northern and western jetty faces to produce markedly improved berthing conditions.

Dunalley Jetty

Fendering was installed, extending similar work in previous years. Expenditure for the year amounted to \$4 000. The fendering reduced the incidence of damage to the sponsons of vessels moored at the Jetty.

Bridport Harbour

Specialist coastal engineering consultants, the Water Research Laboratory of the University of New South Wales were engaged to undertake a study of the natural system at Bridport Harbour. The study was aimed at the potential for possible measures for improvement of the harbour. A program of minor works was also undertaken. These works were raising of rock training walls to high tide level and pilot dredging of the navigation channel.



Expenditures recorded for the year were:

Harbour Study—\$28 000
Training Wall Raising—\$158 000
Pilot Dredging—\$35 000

Further expenditure will be necessary to complete the study and dredging in the 1988-89 financial year.

Alonnah Causeway

A 44 m long sand causeway with protective rock batters was constructed to the existing breakwater (a section of the old Hobart floating bridge). Sand was also dredged from behind the breakwater to give improved access to vessels. The work was completed at a cost of \$18 000.

Port Davey Navigational Light

A solar powered navigation light was purchased at a cost of \$6 000. The unit will be needed as a replacement to the existing gas powered light and will decrease annual servicing and maintenance costs at this remote location.

Strahan Slipway

The single remaining timber slipway cradle at the existing 80 tonne slipway was replaced with a new steel cradle at a cost of \$18 000.

Construction of a 100 tonne slipway, adjacent to the existing 80 tonne structure began in January. By 30 June 1988 earthworks were close to completion, pile driving was 80 per cent complete and all pre-casting of the concrete crossheads and pile tips had been completed. Expenditure for 1987-88 was \$415 000.

Cape Barren Island Jetty

Design was completed for renewal in timber of the complete 32 m length of deck on this jetty. The design permitted upgrading to 15 tonne truck loading. Preliminary work and ordering of materials cost \$33 000 with siteworks to follow next financial year.

Jetty Signing and Markings

In accordance with the State Jetties Regulations 1987 sections of some State jetties were marked with alternate black and white kerb markings to permit space to be reserved specifically for loading and unloading. Official signs were also erected explaining the significance of the markings. The cost of this work was \$13 000. Reports received confirmed that the signing and markings relieved much of the conflict which occurred in the past between users of jetties.



Fishing Ports Upgrading

Work continued or was initiated on a number of projects emanating from the May 1982 Tasmanian Fishing Port Study.

Stanley Fishermens Dock

Stage I of this upgrading was completed at a cost of \$100 000, amounting to \$1.467m in total. This included completion of 135 m of anchored steel sheet pile walling and installation of water and power services.

Stage II of the upgrading, comprising a 22.5 m extension of the existing unloading wharf at the eastern end of the dock, was approved by the Parliamentary Standing Committee on Public Works in March but construction was not initiated.

Triabunna

A total cost of \$74 000 was incurred, associated with the dredging work and slipway upgrading of the previous year. This sum included final contract dredging payments of \$71 000 and bund wall construction cost of \$2 000.

Currie

The Department presented evidence to a Parliamentary Standing Committee on Public Works hearing in December for the construction of a new jetty and breakwater. The Committee approved the proposal. Exhaustive investigations were carried out to find the most suitable source of quarry rock for the breakwater at a cost of \$6 000. Commencement of breakwater construction awaited finalisation of the investigation.

The complete quantity of marine grade steel piling was purchased and 76 of the required 150 precast concrete deck units for the jetty were manufactured, at a cost of \$114 000.

St Helens—Georges Bay Training Wall

Six-monthly monitoring by hydrographic survey continued. Monitoring revealed continuing stabilisation of the navigation channel within the inner delta, deepening of water over the barway and shortening of the length of the barway. Structural repair of the training wall was required after storm attack and in one area where subsidence was observed.

The Department was represented by former Assistant Director, Construction, D. A. Wharmby on the steering committee formed to update the 1982 Tasmanian Fishing Port Study. The report of the committee was finalised early in 1988.

Bridge Maintenance

Tasman Bridge

It was necessary to recover, refurbish and reinstate the electrical monitoring device which measures vertical, horizontal and lateral displacement of the bow of the 'Lake Illawarra' at Pier 19, in August/September. This work was undertaken in response to corrosion-induced fracture of a vital measuring rod component. The device, which is connected between the bow of the vessel and the nearest pile of Pier 19, was installed in 1977. It was previously refurbished in 1982. Regular quarterly readings monitor any bow displacement and indicate that the vessel has moved only 14 mm in the past four years. In September the monitoring device was on public display at Centrepont as part of a DMR and HEC exhibition for Engineers Week.

Following a successful one year trial on five 'test' poles, new short length outreach arms with new lanterns were fitted in February to the existing roadway lighting poles on the bridge in replacement of the original long outreach arms (1.5 m long). This was considered necessary to reduce the incidence of structural fatigue, cracking and weld failures found in a number of lighting standards on the bridge. These failures were attributable to the combined effects of high wind and dynamic vibrations from traffic compounded by the length and flexibility of the original outreach arms. The replacement work will improve the safety of the poles and lanterns and will reduce the frequency of lane closures needed for pole repairs and lamp replacements.

Bridgewater Bridge

Strengthening construction work to enable removal of a 38 tonne load limit on the bridge is being undertaken by DMR's Moonah Workshop and South East District's workforce and supervision.

Lift span openings totalled 102 in 1987-88. The openings were required for maintenance purposes on 11 occasions and to allow passage of 271 vessels, comprising:—

- Ferry and cruise boats—26
- Private pleasure craft—245

This represents a 22 per cent reduction in lift span openings compared with the previous year's total of 131 openings.

It should be noted that Australian Newsprint Mills at Boyer is no longer transporting newsprint by water.

Bruny Island Ferry Terminals

One of the 1 450 mm long rubber fenders on the finger pier at the Roberts Point Terminal failed and was replaced as a matter of urgency. Routine and emergency hydraulic and electrical maintenance was carried out as required throughout the year.

Denison Canal Swing Bridge

The steel grid roadway and footway sections of the swing span deck were repainted with anti-skid coatings. Stabilization of the eroding banks of the canal was temporarily postponed due to lack of funds. Vessels passing through the canal in 1987-88 totalled 1 346 which represented an 18 per cent upsurge in canal usage, an increase of 206 vessels compared with the previous year. This undoubtedly was due to the increased boating activity associated with the Bicentenary celebrations in January when 390 vessels passed through the canal.

In February the swing span's 30 year old main drive shaft sheared through during a closing operation. The canal was temporarily closed to vessels for two days whilst a temporary replacement gearbox was modified and installed. A new shaft was manufactured by Moonah Workshop and installed with minor interruption to traffic. Routine hydraulic and electrical maintenance was undertaken on a regular basis through the year.

Bowen Bridge

Vandalism continued to be a problem requiring further strengthening and ongoing maintenance on the manproof fencing erected at the western abutment and Pier No. 9. Signs prohibiting fishing, which were erected in 1987 proved to be successful in keeping the footway clear of offal. Routine maintenance included sweeping decks and clearing scuppers.

Batman Bridge

Work began on repainting the deck trusses. Routine maintenance included sweeping the decks regularly and scupper cleaning.

Paterson Bridge

Routine minor maintenance included graffiti removal.

General

Repainting was completed on the Liffey River Bridge at Carrick (Bass Highway) and the South Esk River Bridge at Perth (Midland Highway).

Deck remedial works necessary on the Brid River Bridge (Bridport Main Road) and Stoney Brook Bridge (at Exeter, Frankford Main Road) were completed. This involved casting reinforced concrete overlays to act compositely with the existing concrete decks and renewal of the concrete kerbs and fences.

Bridging which received attention on the Bass Highway were Don River Bridge, Devonport, Meander River Bridge, Deloraine, Leven River Bridge, Hobbs Parade, Ulverstone, South Road Underpass, Ulverstone, Victoria Bridge, Devonport, and Ironcliffe/Road Overpass Penguin. The Arthur River Bridge (Arthur River Road) was refurbished.

The Jordan River Bridge at Gagebrook (East Derwent Highway) and Little Swanport River Bridge (Tasman Highway) were repaired under traffic. Repair of the Richmond Bridge on the Coal River was undertaken by local stonemason, Mr S. Kaye.

The background work of updating bridge details, and revision and listing of bridges on unclassified roads in cities and towns was completed. Work on the bridge inventory and allocation of numbers continued.

PLANT

General

The Plant Division, which incorporates workshops at Moonah, Launceston and Ulverstone, provides plant and workshop facilities for the Department's construction and maintenance activities on roads and bridges.

Income from DMR plant hire amounted to \$13.53m. In addition \$15.23m was paid to private contractors for the hire of plant on DMR projects during the year.

Plant Purchases

An amount of \$3.450m was spent on equipment purchases and replacements, including one D5 dozer, two heavy construction graders, two heavy hydraulic excavators, three 7.5 m³ tip trucks and pig trailers, one self propelled vibratory roller, two 4WD tractors and one hotmix plant.

Training and Driver Testing

During the year 67 people, including 45 from other Departments, were tested and issued with DMR driving permits.

One day defensive driving seminars were held at Moonah, Launceston and Ulverstone with a total attendance of 78.

Vehicle Accidents

The frequency of vehicle accidents increased during 1987-88 from 0.72 accidents per 100 000 km to 0.98. Personal injury was negligible. Twenty two accidents each resulted in damage in excess of \$1 000.

Apprentices

Participation in the Hydro-Electric Commission's Appentrice Training Scheme was made available again to first year metal trades apprentices from Moonah Depot. Associated Pulp and Paper Mills' training scheme was available to Ulverstone Depot apprentices.

The number of apprentices currently undergoing training in the Department's workshops is 56, made up as follows:—

- Moonah—25
- Launceston—17
- Ulverstone—14

Depots and Workshops

The Workshop Production Account recorded an annual turnover of \$7.855m. Signs to the value of \$437 000 were manufactured by the Moonah Sign Shop.

Major work during the year included the design and manufacture of an elevating conveyor and feeder, fabrication of three sign gantries, Scamander River Bridge beams and structural works, Victoria Dock Bridge upgrading and commencement of Bridgewater Bridge strengthening to NAASRA standards.

Moonah Workshop processed 408 tonnes of reinforcing steel.

Workshop Equipment Purchased

- Hydraulic Pipe Bender—Launceston
- Squeeze Roll Applications for Sign Manufacture—Launceston and Ulverstone
- Heavy Duty Field Welder—Moonah
- Durst Auto Electric Test Bench—Moonah
- Workshop Compressor—Ulverstone
- Portable Welder—Ulverstone

Depot Improvements

- Purchase of Land—Ulverstone
- Additional Depot Yard Sealing—Ulverstone
- Ventilation System and Skylights for Workshop—Launceston
- Public Address System—Moonah
- Steelyard Improvements—Moonah

Financial Statements

As from 1 July 1988 Plant Division's financial trading period was changed from April/March to July/June fiscal year.

The Division trading account is the Road Construction Plant Suspense Account which must be kept as required by Section 6 of the Roads and Jetties Act 1935. The financial statements for the period are reported in Annexure D.

SURVEY SECTION

General

The section provides survey and mapping services for road and bridge design, construction by direct control and contract, contract supervision, planning of future highway development, civil design projects, land acquisitions, and Materials and Research investigations.

A total of 28 field survey parties operate from District Offices and project site offices and demand for services continued at a high level throughout the year.

Projects

Survey projects totalling 176 for engineering design and land acquisitions were undertaken during the year. Over 100 significant engineering survey projects were completed and required the establishment of some 100 km of accurate control traverses from the State Geodetic Network. These traverses are used as the basis for survey, design and construction on major projects.

Major projects included:

- Bass Highway (Illawarra Road to Hagley)
- Bellerive Bypass
- Bellerive Bypass Extension (Rokeby to Lauderdale)
- Brooker Highway (Abbotsfield Road to Granton)
- Bridport Port Development
- Burnie Access Road (Bass Highway to Mount Road)
- Currie Harbour Breakwater
- Kings Meadows Connector (Launceston Southern Outlet to Quarantine Road)
- Tasman Highway (Lilydale to Scottsdale)
- Tasman Highway (Runnymede to Orford)
- West Coast Corridor (Balfour to Corinna)

The demand for surveys for land acquisitions and disposals of surplus land was particularly high. Surveys for 75 separate projects involving 283 properties were completed.

The installation of an Apollo stand alone work station in the South East District Office proved very successful in overcoming major problems experienced in the processing of MOSS surveys due to networking and communication links between Head Office and District Offices. This resulted in significant gains in efficiency and productivity in the processing of field surveys. Similar work stations are soon to be installed in both the North East and North West District Offices.

MATERIALS AND RESEARCH LABORATORY

The year 1987-88 saw the introduction of a progression scheme for technicians and the registration of the North East District laboratory in the field of mechanical testing by the National Association of Testing Authorities (NATA).

Laboratory Activities

An increasing proportion of the resources of the three laboratories was directed to control testing of contract works. There was a reduced call for testing for direct control works, particularly for stores issues such as paints, pipes and reflective materials.

The testing of bituminous products increased during the year, mainly due to the extended use of the asphalt plant. The call for concrete testing in the South East District was lower than in previous years. Concrete testing in the North East laboratory rose by 60 per cent. There was an increased usage of the now acceptable small 100 mm diameter concrete compression cylinders.

The Central Laboratory ceased testing pipes for the Building Regulations Board due to a re-organisation within that authority.

The Central Laboratory undertook a number of special projects including:

- the testing of the reflectance of 400 road signs for an ARRB project
- the performance of frequently used gravels and aggregates under the wet-dry strength variation test
- the evaluation and stabilisation of marginal road base materials
- a review of the testing procedures for the low profile Haenni loadometers.

Field Testing

Pavement evaluations were undertaken on 128 km of roadway. The most significant of these were:

- Lyell Highway, Victoria Pass to Nelson River
- Bridport Main Road, Pipers River Secondary Road to Dalrymple Main Road
- Waratah Main Road, Waratah to Luina
- Murchison Highway, Que River Turnoff to Waratah Main Road.

The most significant geotechnical investigations were:

- the Pieman River Bridge and approaches
- the realignment of Old Surrey Road, Burnie
- landslips on the Southern Outlet, Hobart and on the Hawks Hill Deviation at Eagle Hawk Neck.

The preparation and review of the geotechnical documents for contracts occupied an increasing amount of resources.

There was a widespread increase in demand for compaction control testing in all districts.

ADMINISTRATION

General

Over the previous three years the Department lost a significant number of senior and very experienced engineers. This mainly stemmed from retirements, but some resignations occurred.

Due primarily to the relatively lower level of salaries in the Tasmanian public sector it was not possible to attract suitable external applicants. It became apparent during the year that this trend had an adverse effect on the average experience level of the potential occupants of senior engineering posts.

Towards the end of the year under review, discussions were held with the Minister for Main Roads and advice was sought from the Department of Public Administration. As a result an overall plan, including a minor restructure, was formulated with a view to improving the level of expertise within senior ranks. It is hoped that the implementation of this scheme will redress the situation during the ensuing 12 months and that a greatly improved situation will be reflected in the next annual report.

Staff

At 30 June 1988 the Department had an approved staff ceiling of 450 full time equivalent positions. The actual number employed at 30 June 1988 was 427, made up as follows:

Administrative, Accountants and Clerical Staff—116
Professional Engineers—82
Surveyors and Survey Assistants—51
Scientific Officers, Technical Officers, Engineering Assistants and Technicians—87
Drafting Officers—50
Typists and Other Keyboard Classifications—26
Others—15
Total State Service Act Staff—427

These staff are located in the following offices.

Head Office, Murray Street, Hobart—208
South East District Office, Derwent Park—44
North East District Office, Launceston—52
North West District Office, Ulverstone—56
Central Workshops and Stores, Moonah—41
Materials and Research Laboratory, Derwent Park—26
Total—427

Senior appointments made during the year were:

A. H. Wilson was promoted to Deputy Director
J. F. Lennon was promoted to Senior Engineer, N.E.D.O.

J. C. Eckersley-Maslin was promoted to Senior Engineer, M and R

K. S. Walters was promoted to Engineer, S.E.D.O.

J. N. Hardwick was promoted to Section Engineer Road Design

G. R. Jackson was promoted to District Surveyor, S.E.D.O.

K. A. Ryan was transferred to Assistant Director Construction

A. N. Fearnley-Sander was promoted to Division Engineer Planning and Traffic

I. G. Gibbs was promoted to Road Planning Engineer

G. L. Booth was promoted to Civil Designs Engineer

The following officers retired or resigned during the year after lengthy periods of service:

P. S. Forrest, Civil Designs Engineer—41 years

H. E. Barratt, Senior Field Assistant—21 years

N. R. Coates, Clerk—26 years

A. J. Devlyn, Senior Field Assistant—29 years

J. S. Locke, Supervisor—33 years

D. N. Hensby, Clerk—17 years

D. Hangs, Computer Systems Officer—22 years

V. Agostini, Plan Printer—28 years

R. A. Hurd, Engineer—18 years

P. A. Meyer, Division Engineer Road Construction—24 years

A. T. Boutchard, Mechanical Engineer—41 years

M. G. Linton retired after more than 45 years service. Mr Linton joined the former PWD as a scholarship holder in 1942. He retired from the DMR in October, having occupied many positions throughout the State. For the last two years prior to retirement Mr Linton acted in the position of Deputy Director.

It is with regret that the death of W. Kowaluk, Assistant Materials and Research Engineer, is recorded. Mr Kowaluk served the Department for 20 years.

Study Courses and Staff Development Program

Like all agencies the Department is required to undertake stringent human resource budgeting. This stresses the need to maintain the skills of existing employees at an optimum level so that the current or increased output can be maintained with static or diminishing staff numbers.

Accordingly, with the growing emphasis on training and retraining the Department moved to appoint a Staff Development Officer. The position was advertised and it was anticipated the employee would take up duty early in the new financial year.

At 30 June the Department had 25 employees receiving time off for assisted study. There were two engineering scholarship holders at the University of Tasmania.

Long Service Awards

Five employees completed 40 years service. Presentations were made to them in December by the Premier, the Hon. R. T. Gray.

E. G. Ashlin

A. T. Boutchard

W. M. Cartledge

K. R. Sams

B. A. Synott

In February the Minister for Main Roads, the Hon. I. M. Braid MHA, presented awards to DMR employees who had completed 25 years and 35 years service.

35 Years Service

A. J. Devlyn

A. W. Felmingham

T. C. Fletcher

E. E. Free

J. R. Gluskie

L. Munro

25 Years Service

W. L. Rowlands

B. J. Poole

P. I. Ingram

W. R. Essex

W. J. Turner

Industrial

Departmental wages increased in line with the National Wage decision of 10 March 1987. Further site allowances were granted to employees working on major road and bridge building projects. As at 30 June 1988 the Australian Workers Union, Building Trades and Federated Engineer Drivers and Firemen's Awards had been varied under the 4 per cent Second Tier principles.

As at 30 June 1988 the numbers of employees engaged in workshop and field operations were:

Workshops and Depots—253

Construction and Maintenance of Roads and Bridges—820

Total—1 073

Retirements for the year totalled 24 including the following who served the Department for many years.

Retirements due to age:

M. V. Heather—Foreman—39 years service

C. F. Clayton—Driver—39 years service

A. S. Elwell—Labourer—34 years service

V. J. Jackson—Labourer—34 years service

R. A. Gleeson—Foreman—34 years service

A. Williams—Pipe layer—30 years service

A. F. Castle—Labourer—29 years service

Retirements due to ill-health:

T. R. Richards—Driver—34 years service

R. I. Press—Labourer—30 years service

K. F. Donovan—Plant Operator—30 years service

A. E. Graham—Labourer—27 years service

It is with regret that the death of the following employee is recorded:—

W. T. Sutton—Tractor Driver—32 years service

Workers' Compensation

The following payments under the Workers' Compensation Act were made for the year ended 30 June 1988.

Weekly Payments—\$333 092.33

Medical Payments—\$141 036.27

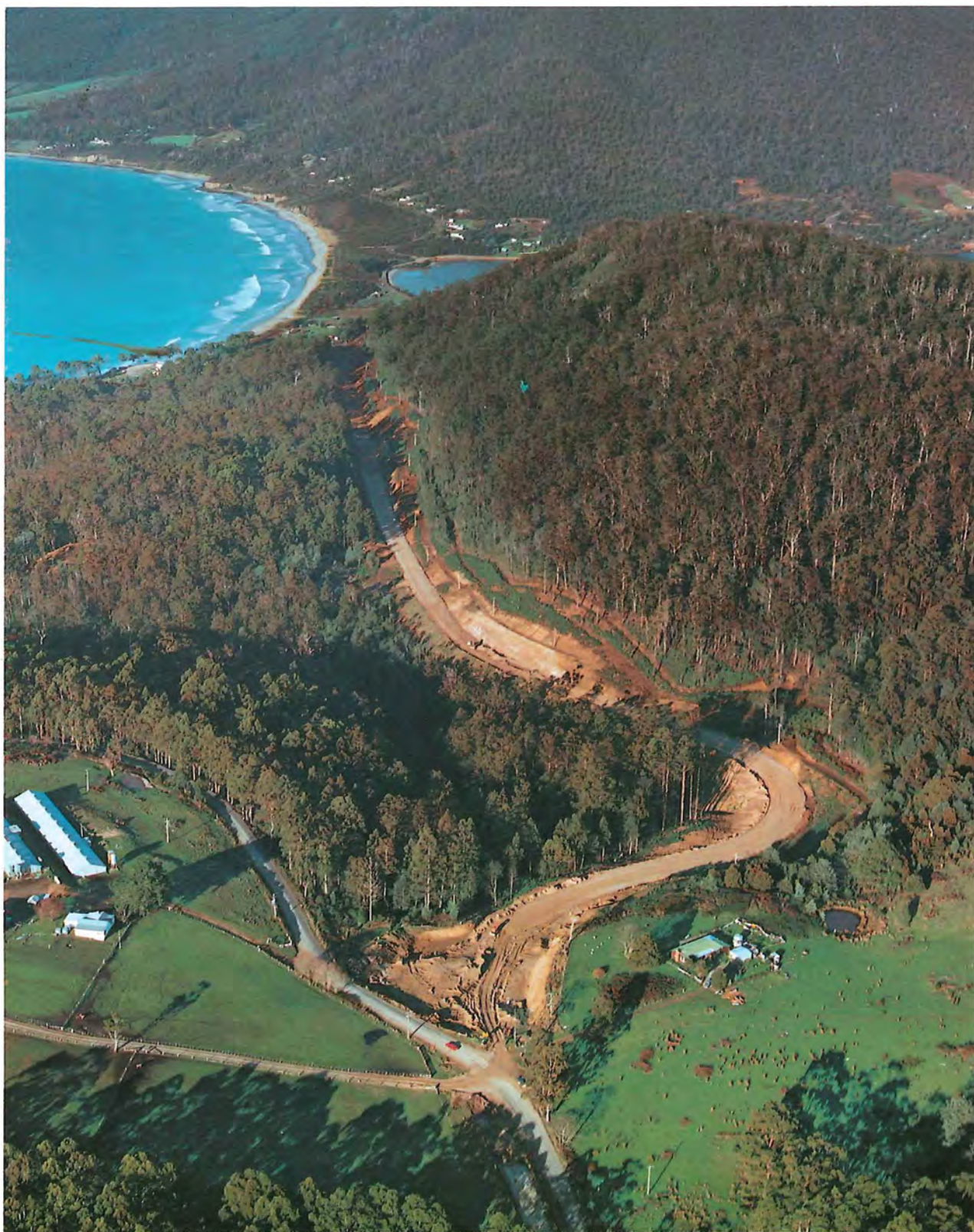
Recoveries from the Motor Accidents Insurance Board amounted to \$22 182.98.

Computer Information Services Section

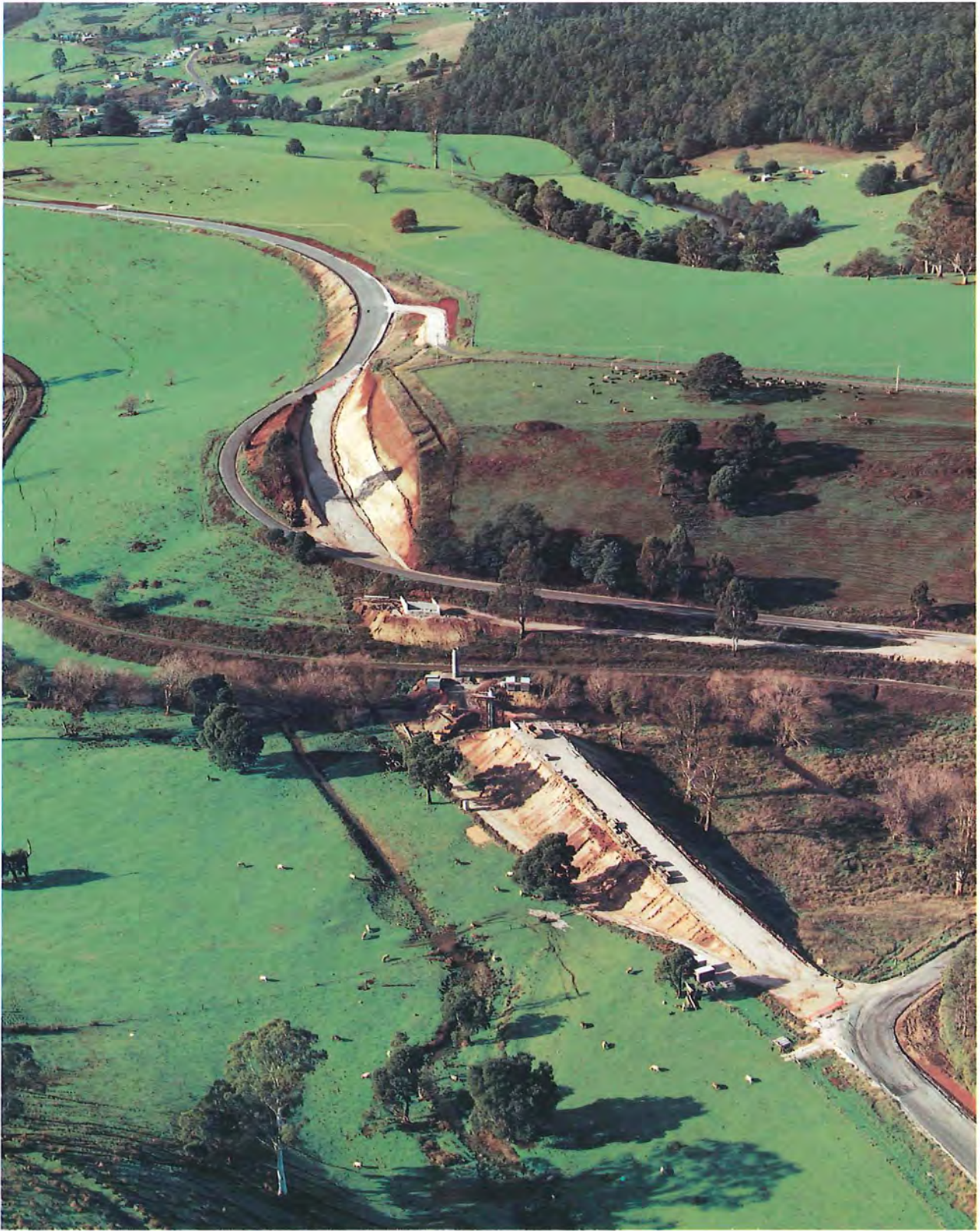
This Section provides computer services to both technical and administrative users with the aim of improving efficiency of operations. The services available are consulting, system development and access to external bureaux services including the State Computer Centre, Transport Commission and CEANET Pty Ltd.

Major activities during the year were:

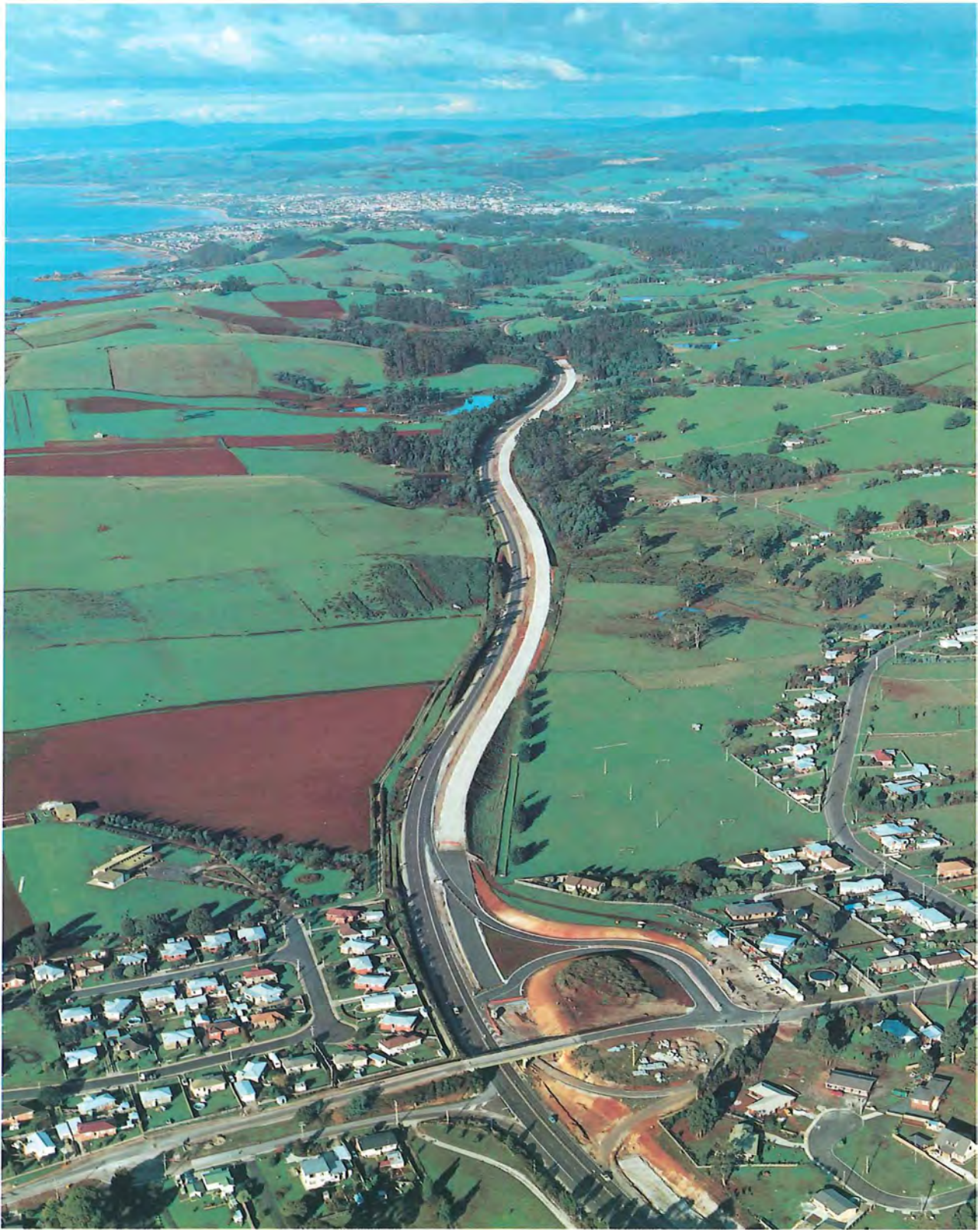
- establishment of a system for costing Departmental salaries
- costing systems implemented for District Wages and Departmental Plant
- creation of feeder systems to the CFS for District wages and Departmental plant
- design and implementation of an inventory system for recording all DMR computing equipment
- design and implementation of a system to record period tender registrations for casual hire of plant and equipment
- procedure for tracking time lost through accidents per major DMR centre



ARTHUR HIGHWAY
Hawks Hill Deviation



RINGAROOMA MAIN ROAD
Legerwood Rivulet Bridge



BASS HIGHWAY
Ulverstone to Penguin



SMITHTON TO ZEEHAN
Blackwater Road to Balfour

- design and implementation of a system for recording a comprehensive corporate inventory of all bridges in Tasmania
- compilation of a report to be used as a basis of establishment of a Roads Information Management System (incorporating Pavement Management)
- transfer and enhancement of the Sundry Debtors Ledger from outdated accounting machines to an on-line system on the Prime computer
- commenced development of initial stages of a Project Control Management System in conjunction with Touche Ross Consultants
- upgrading of the PRIME 2655 to a PRIME 2755 and the provision of an extra 32 terminal lines
- acquisition of an additional APOLLO workstation primarily to support terminal connection to the APOLLO ring
- expansion of the Departmental communications network by the provision of an additional high speed line to each of the North East and North West District Offices

Industrial Safety

The Central and Districts Safety Committees continued the promotion of improved working conditions, safety and occupational health. This included a program of on-site inspections throughout the year.

In keeping with the Department's policy of maintaining efficiency and safety at all levels, seminars for foremen were conducted at Launceston, Ulverstone and Hobart.

Training of employees on road construction, bridge sites and District workshop areas was conducted at all levels. Over the twelve month period, training was organised in the areas of first aid, chain saw operations, crane chasing, foremanship skills and first year apprentice induction.

First aid courses were held in the North East and North West Districts, attended by 45 employees, 44 of whom succeeded in gaining their certificates.

Three chain saw courses for efficient safe operation and special skills in tree felling were held. Two were held in the South East, where 24 employees gained their efficiency certificates, and one in the North West where 13 employees were successful.

A one day crane chasers' course held at the Moonah Depot was attended by 12 employees. First year apprentice, induction and safety courses were held in the three main workshop areas of the Depot.

Six National Safety Awards were gained by gangs and workshop groups during the year. These included a Five Year Award to the Maintenance Gang at Derwent Bridge and one Year Award and Certificates to:

Safety Group No. 5 (Moonah Depot)

Maintenance Gang (Queenstown)

Maintenance Gang (St Marys)

Construction Gang (Huron Construction) S.E.

Materials and Research Laboratory
Lampton Avenue S.E.

Total safety awards gained by the Department now number 25.

The Department's accident statistics showed significant improvement, with lost time accidents falling from 199 (1986-87 period) to 152, a reduction of 47 for the period. The frequency rate also fell from 62 to 51 and the monthly average of lost time accidents from 16 to 13.

Accident Statistics

	1986-87	1987-88
North East District	47	32
South East District	65	56
North West District	51	36
Moonah Depot	36	27
West Sub District	0	1
Materials and Research Laboratory	0	0
Total	199	152

Property Acquisitions

In 1987-88, 210 property acquisitions were completed, 219 were begun and at 30 June 1988, 333 acquisitions were in progress. Expenditure on property acquisitions for the year was \$2.599m compared with \$3.552m for the previous year. Included in this total was an amount of \$1.127m for National Highway projects.

The major areas of expenditure included the purchase of properties affected by the construction of the Bass Highway (Penguin to Howth and Prospect Vale to Hagley), Deloraine Bypass, West Tamar Highway, Kings Meadows Connector and the Tasman Highway (Falmouth to Chain of Lagoons). Many minor property acquisitions resulted from the reconstruction of the Arthur Highway, Huon Highway, Channel Highway, Sheffield Main Road and the Lilydale Main Road.

Twelve residential properties which are totally affected by the proposed new route of the Bass Highway between Penguin and Howth were purchased by the Department ahead of construction and will be occupied by private tenants until required for roadworks.

STORES

The total value of all stores issued during the 1987-88 financial year from the three District Stores was approximately \$2.8m. The value of stores holdings as at 30 June 1988 was \$1.336m.

Construction Store Stock Ledger Value

	Moonah Launceston		Ulverstone	Total
	\$	\$	\$	\$
Opening stock (1987)	755 167	178 680	197 201	1 131 048
Closing stock (1988)	973 342	213 410	209 348	1 336 100
Increase	158 175	34 730	12 146	205 052

The increase in the value of stock of \$205 051.78 was largely due to the holding of Tempcore bar. Stocks of bar at 30 June at the Moonah Steel yard totalled 702.342 tonnes after 450 tonnes had been issued.

Period contract orders placed for stores totalled 9 686. Orders processed through the Supply and Tender Department totalled 20 314.

Construction Store Maintenance Account

Construction Store Budget—\$220 000.00
 Review Increase—13 000.00
 Expenditure—233 725.00
 Over Expended—725.00

Contracts

The following contracts were entered into during 1987-88 (excluding building demolitions and sub-contracts).

Contract No.	Description	Price \$
R-N/R-114	Bass Highway Reconstruction, Prospect Vale to Pateena Road	3 340 830.10
R-N/R-121	Bass Highway, Forth River to Ulverstone Bypass Road Construction Stage 2	3 789 423.47
R-N/R-127	East Tamar Highway, Four Mile Creek, Road Widening	346 069.95
B-A/R-129	Lilydale Main Road, Underwood Deviation to Lilydale	1 495 739.50
B-A/B-132	Tasman Highway, Davies Avenue Underpass and Associated Roadworks	1 997 502.60
B-A/R-136	Arthur Highway Reconstruction, Masons Point to Taranna	2 249 502.00
R-A/R-143	Mornington Interchange, Kerb and Channel Works	106 657.50
B-A/B-144	Tasman Highway, Hobart, Davies Avenue Underpass Steel Reinforced Earth Retaining System	191 259.79
R-N/B-146	Bass Highway, Illawarra Main Road to Hagley Station Lane, Bishopsbourne Road Underpass	574 495.80
R-N/B-150	Launceston Southern Outlet, Kings Meadows Connector Underpass, Steel Reinforced Earth Retaining Wall System	270 238.62
B-A/B-152	Royal Park Interchange, Launceston, Road No. 4 Steel Reinforced Earth Retaining Wall System Design and Supply	144 090.00
P/SE-408	Tasman Bridge and Bowen Bridge, Navigation and Feature Lighting, Signal Gantry Power Supply, Maintenance	Schedule of Rates
B-NW/409	Supply and Installation of an 8 tonne Electric/Hydraulic Winch for 100 tonne Slipway at Strahan	63 632.00
R-S/E-410	Bellerive Bypass, Mornington Interchange Asphalt Surfacing	239 872.25
R-S/E-411	Brooker Highway, Duplication between Berriedale and Jimbirn Street Overpass Asphalt Surfacing	231 822.95
B/NE-412	Dredging at Trent Water, Bridport	141 085.00
R-S/E-1049	Brooker Avenue, Intersection with Derwent Park Road Asphalt Surfacing	46 717.00
R-S/E-1050	Brooker Highway, Duplication between Berriedale and Jimbirn Street Overpass, Kerb and Channel Works	58 830.00
R-S/E-1054	Rokeby Main Road, Riawena Road to Bellerive Roundabout, Asphalt Surfacing	131 905.30
R-S/E-1056	Tasman Highway, Causeway No. 2, Asphalt Surfacing	103 488.40
R-S/E-1063	Bellerive Bypass, Mornington Interchange, Paving	20 617.00
R-N/M-1064	Midland Highway, Antill Ponds towards Woodbury, Asphalt Surfacing	79 930.00
R-A/R-3076	Bass Highway, Sisters Hills, Supply and Lay Asphalt	191 530.00
R-N/M-3077	Bass Highway, Parramatta Creek, Supply and Lay Asphalt	187 528.00

The Annual Internal Audit for the year ended 30 June 1988 was completed in all districts with the following results:

	Moonah	Launceston	Ulverstone
Items counted	5 142	2 990	4 409
Discrepancies	484	48	191
Slow moving	2 123	201	792

State Jetties Regulations 1987

Regulations were prepared to control the use of State jetties and marine facilities. The regulations enable the Minister to appoint a jetty master to control operations at the jetty. In each case, police officers have been appointed to this role.

The regulations were introduced because of continuing requests from professional fishermen and private boat owners who were experiencing difficulty in gaining access to public jetties. Some boat owners were using the jetties to provide permanent mooring. At the major jetties certain sections were painted with black and white markings and those areas were restricted to short term mooring for loading and unloading vessels.

Because of the broad consultation that took place when the regulations were being prepared, there have been no complaints received from the public. The regulations appear to have been most effective in improving access to these State owned facilities.

<i>Contract No.</i>	<i>Description</i>	<i>Price \$</i>
R-N/M-3078	Bass Highway, Benges Road to Christmas Hills, Supply and Lay Asphalt.....	89 511.00
R/NW-3079	Murchison Highway, Hellyer Gorge, Supply and Lay Asphalt.....	65 989.00
R/NW-3080	Bass Highway, Brittons Swamp, Supply and Lay Asphalt.....	61 936.00
R/NW-3081	Murchison Highway, Mount Black to Station Road, Supply and Lay Asphalt.....	52 676.00
R-NW/3087	Bass Highway, Cassidys Bog to Devils Elbow Road Supply and Lay Asphalt.....	103 318.00

Agreements

Contracts below \$20 000 in value (\$30 000 for bituminous works) are usually the subject of a simplified written agreement. The following agreements (excluding consultants) were entered into during 1987-88:

	<i>Bridges</i>	<i>Sealing</i>	<i>Gravel</i>	<i>Others</i>	<i>Total</i>
North West District .....	....	11	4	12	27
North East District .....	....	4	8	30	42
South East District	5	23	14	20	62
Head Office	3	....	1	11	15
Totals	8	38	27	73	146

ROAD AND BRIDGE PROJECTS North East District

NATIONAL ROADS

Midland Highway

Vertical Curve Improvements near Cleveland

Design was amended to include safety barriers on the two main embankments. Installation of guard rail and minor cleanup works were completed. Expenditure for 1987-88 was \$178 000 and total expenditure to 30 June 1988 amounted to \$941 000.

Launceston Southern Outlet

Breadalbane to Strathroy

The extension of the Outlet Road to connect with the Midland Highway at Breadalbane was constructed as two separate contracts. The first contract was let to Costain Pearson Bridge for construction of 3.7 km of dual carriageway. The second contract was let to the DMR for construction of a roundabout, linking the Outlet Road with the Midland Highway and Evandale Main Road. Both contracts were completed and opened to traffic on 28 August.

Expenditure in 1987-88 was \$651 000 and total expenditure to 30 June 1988 was \$6.632m.

Planting for landscaping was undertaken by the Department's day labour force and was almost completed.

Kings Meadows Connector

Connector Interchange

Design of this structure was by consultants. Road design and preparation of tender documentation was undertaken by DMR staff. The single span structure, 20.8 m between abutment faces, will carry the existing dual carriageway of the Launceston Southern Outlet over the new Kings Meadows Connector. The superstructure consists of precast post-tensioned broad flange I beams, with in situ top flange infills. Abutments and wingwalls are of reinforced construction. Staged construction, with temporary wire mesh faced reinforced earth retaining walls, will be used to maintain traffic on the Southern Outlet.

A contract was awarded to Reinforced Earth Pty. Ltd. on 16 May for design and supply of all components for the reinforced earth retaining wall which will support the interchange bridge.

Tenders were called for the construction of the interchange structure and ramp, to be carried out in two stages. Completion is expected towards the end of 1989. Expenditure in 1987-88 totalled \$106 000, for consultant's fees, site investigation and acquisitions.

Bass Highway

Prospect Bypass Stage III

This contract, for which the DMR was the successful tenderer, comprised pavement construction over Stages I and II earthworks. Work was completed several months ahead of schedule and the Bypass was opened to traffic on 23 January 1988. Expenditure for the financial year was \$1.568m and the total cost to 30 June 1988 was \$5.498m.

Prospect Vale to Pateena Road

Shaw Contracting Pty. Ltd. was the successful tenderer for construction of some 2.0 km of dual carriageway on a new alignment adjacent to the existing Bass Highway. Work began in February on clearing, drainage and some earthworks. Expenditure to 30 June 1987-88 was \$855 000 and the total cost to 30 June 1988 was \$919 000. The contract is scheduled for completion in March 1990.

Pateena Road to Hagley

The Highway Planning Report was submitted and subsequently approved by the Commonwealth Government. Planning on this project was completed and it was transferred to the Road Design Division.

Detailed road design of the 6.2 km section from Pateena Road to Illawarra Main Road has concentrated on fixing the alignment in order to provide information for the design of the South Esk River bridge and locating road boundaries.

Illawarra Main Road to Hagley

This section has a length of approximately 14 km. Because the Department's design staff were fully committed on other projects, submissions for the design of 11 km of the section were sought from selected consultants. Associated Engineering Consultants, a consortium of three local firms, was selected and appointed in July 1987.

Initial priority was the design of the Bishopsbourne Road Underpass and the Liffey River bridge, based on road alignment information supplied by the Department. The section involves a further three major road overpass structures.

Acquisition information for the new road reserve has been supplied and detailed road plans are expected to be completed in the next financial year.

South Esk River Bridge, Hadspen

Design investigation was undertaken for a bridge across the South Esk River on a new alignment of the Bass Highway, approximately 1 km upstream from the existing bridge at Hadspen. Enpro Constructions Pty. Ltd. were appointed to act as consultants for superstructure costing and construction method advice. Three alternative superstructure types were investigated in detail.

The proposed six span structure, 226.4 m between abutment faces, has a superstructure cross section consisting of four steel plate girders, with a composite concrete deck. The girders will be designed for erection by incremental launching.

Bishopsbourne Road Underpass

This is a three span structure which will carry the new Bass Highway between Illawarra Main Road and Hagley over Bishopsbourne Road. The underpass has an overall length of 36 m. Pretensioned concrete planks are used for the superstructure and abutments and piers are on spread footings.

The work involves the reconstruction of 0.5 km of roadworks in addition to the bridgeworks.

The DMR won the contract, valued at \$575 000, to construct the overpass. Work began in June and is expected to be completed in January 1989. Total expenditure to 30 June 1988 was \$347 000.

Bracknell Main Road Underpass

Design was in progress for this structure, which has an overall length of 40 m and will form part of the Bracknell Main Road Interchange on the Bass Highway between Illawarra Main Road and Hagley. The superstructure uses pretensioned planks, with the substructures on spread footings. The bridge contract also involves the reconstruction of some 700 m of Bracknell Main Road.

Liffey River Bridge

Design was completed for this three span structure which will carry the new Bass Highway between Illawarra Main Road and Hagley across the Liffey River. It has an overall length of 61 m, and uses post-tensioned concrete beams for the superstructure with substructure on spread footings.

The three bridges and the associated roadworks were designed by Associated Engineering Consultants.

Hagley—Westbury Bypass

The appraisal of the options to bypass Hagley and Westbury was completed. A submission to State Cabinet resulted in the adoption of the northern route, bypassing Hagley and Westbury on the northern side, as the preferred route for the Bass Highway. An exhibition of the preferred route was planned for early in the following financial year, prior to forwarding the Highway Planning Report to the Commonwealth Government.

Westbury to Deloraine

The Legislative Council Select Committee recommended the selection of the railway route in contrast with the State Government's preferred southern route.

The overview report recommending the southern route but including the Select Committee Report was prepared and forwarded to the Commonwealth Government in October. Approval was still awaited at the end of the financial year.

East Tamar Highway

Widening Bell Bay Turnoff to Four Mile Creek

Design was completed for road widening in association with the replacement of the Four Mile Creek bridge with twin box culverts.

Work continued from the previous financial year and completion was achieved on 1 February 1988. Expenditure for the financial year was \$478 000 and total expenditure to 30 June 1988 was \$2.265m.

Four Mile Creek Road Widening

The DMR was the successful tenderer for this work. The base slab was cast for the replacement precast box culvert. Completion is expected in January 1989. Expenditure in 1987-88 was \$35 000.

URBAN ARTERIAL ROADS

Tamar Region Roads Study

In order to update the 1976-77 transportation study for Launceston, the Tamar Region Roads Study was commissioned. This study enveloped the Tamar Region and assessed road projects within the Launceston, Evandale, Westbury, Beaconsfield and Georgetown Council areas.

The findings of the study will be presented to the Launceston Transportation Region Implementation Co-ordination Committee (LTR-ICC).

Launceston Southern Outlet

Glen Dhu Corridor

Landscaping design by the Launceston City Council proceeded and discussions continued with Departmental officers, finalising areas of responsibility.

Construction was completed and the corridor was officially opened on 24 May 1988. The roadworks involved construction of 1 km of dual carriageway between Glen Dhu Overpass and the Frankland Street/Wellington Street intersection.

Expenditure in 1987-88 was \$2.995m and the total cost to 30 June 1988 was \$10.954m, including property acquisitions.

Kings Meadows Connector

The finally adopted northern route was extended slightly to incorporate the connection to Quarantine Road. A preliminary design was produced by Launceston City Council and the DMR was completing the final detailed design.

Construction began on the section of the connector between Hobart Road and Kings Meadows Interchange. Earthworks were well advanced. Expenditure on roadworks in 1987-88 was \$641 000.

Construction of the Kings Meadows Rivulet culvert was well advanced. Expenditure for 1987-88 was \$55 000. Total expenditure to 30 June 1988 including road and bridgeworks and acquisitions was \$836 000.

East Tamar Highway

Hope Street Sewer Outfall

Reconstruction of the end 36.6 m length of 1.35 m diameter reinforced concrete pipe outfall was completed in October. Expenditure in 1987-88 was \$188 000 and the total cost at 30 June 1988 was \$248 000.

East Tamar Outlet

Detailed design began on the extension of the Outlet from Newnham Creek to Landfall Gate.

Midland Highway

Youngtown Pedestrian Underpass

Major structural work on this single cell concrete box subway was completed in April. Relocation of services, erection of fencing and footpath reinstatement were continuing. Expenditure for 1987-88, including associated roadworks, was \$287 000 and the total expenditure to 30 June 1988 was \$363 000.



RURAL ARTERIAL ROADS

Tasman Highway

Ringarooma Main Road to Branhholm—Legerwood Rivulet Bridge

Design of this bridge was completed in Bridge Division.

Work continued on the construction of beams, pile caps, abutments and piers for this three span, 83.4 m long bridge. Beam construction was completed in September, followed by abutment construction in December. The piers were completed in June. Extensive road approach embankments were at an advanced stage by the end of the financial year, requiring only final pavement construction. The works should be completed in December 1988. Expenditure in 1987-88 was \$487 000 and total cost to 30 June 1988 was \$824 000.



Brid River to Sideling

Works began in early February, consisting of digging out many badly deformed areas, widening and repairing existing shoulders and table drains, replacement of culverts and associated endwalls, granular overlay of varying depths and a reseal over approximately 1.4 km. Expenditure in 1987-88 was \$231 000.

Scamander River Bridge

Design was completed for this structure. Construction of this five span, 152.5 m long bridge continued. A temporary access bridge was constructed. Test piles were driven to determine the type of pile to be used in final construction. By 30 June 1988, 18 of the 25 beams were constructed. The sheet pile caisson was completed to enable excavation of the northern abutment. Expenditure in 1987-88 was \$796 000 and total expenditure to 30 June 1988 was \$892 000.

Elephant Pass Safety Improvements

About 2 km of steel galvanised post and double wire safety fence were completed. Some 400 posts were purchased but were still to be installed.

A short section was widened by cutting into the rockface and at other isolated locations rock outcrops were removed to provide sufficient road width. Expenditure in 1987-88 was \$108 000.

Falmouth to Chain of Lagoons Link Road

Design was completed apart from the northern end where a 3 km route from the Tasman Highway to Four Mile Creek Road was still under investigation. Design was also in progress for Little Marsh Creek Culvert and Lower Marsh Creek Culvert.

This is a continuing project undertaken by the DMR's direct control force.

Progress to 30 June 1988 included substantial completion of all drainage works and earthworks over 14 km from Mariposa to Hughes Creek and sub-base placed to a depth of 300 m in preparation for stabilisation over 10 km. The remainder of the newly constructed road has sufficient sub-base gravel to provide a weather resistant surface. Expenditure in 1987-88 was \$1.587m bringing the total cost to 30 June 1988 to \$7.322m.

Little Beach Creek Culvert

This triple cell reinforced concrete box culvert was virtually complete at the beginning of the 1987-88 financial year. Expenditure for 1987-88 was \$20 000 and total cost to 30 June 1988 was \$243 000.

Banticks Creek Culvert

Construction of this corrugated metal pipe was almost complete at the beginning of the 1987-88 financial year. Construction of the culvert and concrete lining of the invert was completed. Expenditure for 1987-88 was \$57 000 and total expenditure to 30 June 1988 was \$142 000.

Hughes Creek Culvert

Design of this culvert was completed. Foundation and the preparation for placement of the precast units for this 'Bebo Arch' culvert were completed. Erection of the precast units was expected to take place early in July 1988. Expenditure to 30 June 1988 was \$36 000.



West Tamar Highway

Exeter Bypass

Further work was undertaken in defining bypass options. Another option to the west of Exeter is to be recommended for inclusion in the planning scheme.

Cormiston Creek to Legana

Work undertaken in the 1987-88 financial year was limited to minor surcharging of the earth embankment along the mud flats and to maintenance of the previously placed surcharge. Expenditure for 1987-88 was \$34 000. Total cost to 30 June 1988 was \$3.258m.

Legana to Muddy Creek

A length of 700 m was reconstructed and sealed at the Muddy Creek Deviation. Expenditure in 1987-88 was \$308 000 and the total cost to 30 June 1988 was \$1.702m.

Bradys Lookout Climbing Lane

A 1 km climbing lane was constructed at Bradys Lookout, together with a new access and car park for the Lookout. Expenditure in 1987-88 was \$520 000 and the total cost to 30 June 1988 was \$707 000.

Esk Main Road

Deviation at 'Ormley'

Detailed design was progressing following a decision to adopt the lower cost deviation option in preference to upgrading the existing road.

Evandale Main Road

Breadalbane to Launceston Airport

After successful negotiation with landowners, an avenue planting of advanced *Betula pendula* (Silver Birch) was completed. The trees were planted during a very dry summer and although regularly watered, some died and will be replaced in spring.

Frankford Main Road

Survey was undertaken for future design to improve the alignment of the curve east of Frankford Post Office.

Lake Leake Main Road

The Glamorgan and Campbell Town Councils completed minor finishing off work in 1987-88. Expenditure for 1987-88 was \$115 000 and total expenditure for the project to 30 June 1988 was \$8.479m.

Lilydale Main Road

Underwood Deviation

The Underwood Deviation was opened to traffic on the 27 July 1987. Works in 1987-88 included provision of safety fencing, drainage works, landscaping and sight benching. Expenditure in 1987-88 was \$252 000, with a total expenditure to 30 June 1988 of \$2.680m.

Underwood Deviation to Lilydale

The DMR was the successful tenderer for this contract. Work began in April. Earthworks are well advanced and placement of pavement materials has begun. Precast reinforced concrete culvert units for the two drainage structures on Rocky Creek were installed and other drainage works were progressing satisfactorily. Expenditure in 1987-88 was \$492 000 and total expenditure to 30 June 1988 was \$564 000.

Lilydale to Scottsdale—Golconda Road Alternative for Tasman Highway

Detailed planning of a road deviation between Lilydale and Wyena was being undertaken. A public display of the proposed route was planned for early in 1988-89.

LOCAL ROADS

Coles Bay Tourist Road

All design was completed including the new junction arrangements at the Tasman Highway.

Earthworks were completed for a further 1.5 km and pavement to the top of the sub-base layer was placed over 3.5 km. Expenditure for 1987-88 was \$289 000 bringing the total since 1982 to \$3.405m.

Pipers River Secondary Road

Hogans Brook Bridge

This timber bridge, which is in a poor state of repair was closed to traffic and a temporary byroad was constructed nearby. The new bridge, which will be erected in the same position as the old bridge, will be a two-cell box culvert, each cell being 2.4 m wide and 1.5 m deep. Precast crown units will form the walls and deck and the footing slab will be in concrete.

UNCLASSIFIED LOCAL ROADS

Porters Bridge Road—Bridge Approaches

Construction plans were finalised and issued for the construction of the road approaches on a significantly improved new bridge alignment. Some property acquisition was involved.

Access Road to Lake Barrington

An appraisal of the road from Sheffield to the Rowing Course access was undertaken.



HOBART SOUTHERN OUTLET



BELLERIVE BYPASS

ROADS AND BRIDGE PROJECTS North West District

NATIONAL ROADS

Bass Highway

Deloraine Bypass

Stage 1 design, comprising the major road work, was completed.

Stage II design, for the eastern and western connections to the existing Bass Highway, was proceeding.

Various accommodation works in the form of clearing, culvert, drainage and fencing were carried out. Also works were carried out on the Mole Creek Connector to enable it to be brought into service. Expenditure in 1987-88 was \$107 000.

Meander River Bridge

Site works by the DMR were completed by July 1987.

Expenditure in 1987-88 was \$294 000 and total expenditure to 30 June 1988 was \$2.136m.

Mole Creek Connector Roadworks

Design of this 2.1 km link was modified to allow traffic use in advance of the Deloraine Bypass construction.

Completion on this contract, carried out by Avoca Transport Pty. Ltd., was achieved on 29 January 1988. Expenditure during 1987-88 was \$362 000, bringing the total cost to 30 June 1988 to \$1.172m.

Mole Creek Connector Underpass

This contract, awarded to Christiani and Nielsen Pty. Ltd., reached practical completion on 30 March 1988. Expenditure during 1987-88 was \$424 000 and the total cost to 30 June 1988 was \$762 000.

Information Bay South of Latrobe

Design was completed for an information bay and associated deceleration lane, in liaison with Devonport and Latrobe Councils. The project was approved by the Commonwealth Government for funding under the National Highway program.

Duplication, Don Hill to Forth River, Stage 2

Construction was completed in June 1987 but some minor financial matters were still to be finalised. Expenditure during 1987-88 was \$85 000 and the total cost to 30 June 1988 was \$10.365m.

Landscaping was satisfactorily completed, except for minor additional planting and some replacement planting to be done in Spring, 1988.

Duplication, Forth River to Ulverstone

Roadworks Stage 1 contract was awarded to the DMR in 1987. It was completed on 11 May 1988 and provided 2.9 km of divided dual carriageway eastwards from the Forth Road Interchange at the Ulverstone Bypass and 0.62 km of single carriageway service road connecting the existing Westella Drive and Waverley Road to the existing Bass Highway. Expenditure in 1987-88 was \$1.738m and total expenditure to 30 June 1988 was \$2.828m.

The Roadworks Stage 2 contract, with tender price of \$3.789m, was awarded to the DMR. Work began in February 1988 and the dry summer conditions allowed excellent progress on earthworks. At the end of the 1987-88 financial year, excavation work was 90 per cent complete and embankment construction was 65 per cent complete. Expenditure in 1987-88 was \$1.024m and the total cost of Stages 1 and 2 to 30 June 1988 was \$7.808m.

Landscaping for the Stage 1 Section is being designed.

Lovett Street Interchange, Ulverstone On/Off Ramps

Design for the four ramps was completed and tenders were called for construction, in June 1988. Access to the industrial and central business area of Ulverstone will be improved as a result. The existing 2.4 m × 2.4 m pedestrian subway under the Bass Highway is to be extended in both directions to allow the Lovett Street on and off ramps to be constructed.

Duplication, Ulverstone to Penguin Stage 1

Design changes and amendments were undertaken where duplication works were under way. Median openings were included in the design for property owners affected by the new works. Widening of a cutting near Ironcliffe Road Overpass will allow the extension of the works for future staging to the west.

The DMR began work on this contract in April 1987 and by 30 June 1988 the earthworks, drainage and pavement were substantially completed. The new ramps connecting South Road with westbound traffic were completed and opened to traffic. Construction of the South Road Overpass southern abutment retaining wall will enable the completion of pavement work. The project will be completed in 1988-89. Expenditure in 1987-88 was \$1.323m and total expenditure to 30 June 1988 was \$1.963m.

Myrtle Creek Culverts

Widening of the Highway between Ulverstone and Penguin made it necessary to lengthen three culverts on Myrtle Creek. One culvert was 3.7 m wide by 1.8 m high and the others were 2.5 m high. A short transition length of in situ reinforced concrete culvert was used to join the end of the existing skew culvert to the new one. The remainder of the extension was constructed with precast crown units on an in situ concrete floor. Design was completed for a pedestrian footway on the South Road Overpass near Penguin.

Penguin to Howth

The Highway Planning Report for the Pine Main Road Interchange was approved by the Federal Department of Transport and Communications and work continued on the final design for the interchange structure and roadworks. Detailed drawings for service relocations were proceeding.

Design investigations continued on the Penguin Interchange layout and various options were under review prior to choosing a final scheme. Alignment of the route from Penguin to Howth was finalised although the ultimate earthwork extremities were yet to be determined.

Final design for Penguin to Howth is a progressive activity with specific design elements receiving more detailed attention as priorities for the route arise. In some cases it has been necessary to set property boundaries for hardship acquisitions.

Expenditure in 1987-88 on acquisitions and site investigations was \$332 000m and total expenditure to 30 June 1988 was \$965 000m.

Burnie Espressway—Stage B

Landscaping and fencing designs on the ultimate property boundaries were completed. Planting of ivy geranium in the cribwall was completed. Some minor design changes were made, arising from construction activities. Expenditure during 1987-88 was \$356 000m.

RURAL ARTERIAL ROADS

Burnie Access Roads

Reeve Street Connector, Burnie

The geotechnical investigation into the alternative route parallel to Old Surrey Road via land owned by Associated Pulp and Paper Mills and associated companies has continued.

The preliminary investigations indicated that this route may be more economically viable than the Reeve Street corridor. Further geotechnical work is planned following refinement of the proposed alignment.

Ridgley Main Road/Mount Road

Hampshire to Burnie

The future completion of the Guildford Hampshire link will increase the Annual Average Daily Traffic (AADT) volume using Ridgley Main Road and Mount Road by 1000 vpd from its current level of 2000 vpd.

At this stage it is intended that sections of Ridgley Main Road and Mount Road which offer good sight distance should continue in use. The Department has control only of the existing section of classified road.

A Materials and Research pavement report was in progress to establish the existing road pavement's life, and a centre line survey of sections of the road with poor stopping and overtaking sight distance was being conducted.

Bass Highway

Burnie to Wynyard

The submission by a committee of Local Government authorities, the Burnie Port Authority, the Royal Automobile Club of Tasmania and the DMR to have the National Highway extended to Wynyard was unsuccessful. The project, however, is being considered for inclusion in the proposed National Arterial Road Category which will be introduced in 1988-89 under new Commonwealth funding arrangements.

Planning concentrated on assessing the possible impact on the environment, particularly the beach, and the effects on housing and the railway line.

Cassidys Bog to Rocky Cape Road

Work began on a 4.65 km section from Cassidys Bog to the east end climbing lane. The scope of the work included crossfall correction with asphalt and strengthening of the road shoulders in preparation for sealing work. Total expenditure to 30 June 1988 was \$483 000.

Stanley Highway to Wiltshire Junction

Detailed landscape design plans were completed for planting in September/October 1988.

Wiltshire Junction to Black River

Design for this 1.8 km section was approved in principle and almost completed. This virtually completes design for the entire 22 km length from Black River to Smithton Bypass.

Smithton Bypass

The bypass was opened to traffic in May. Following acquisition of the shop at the western end of the bypass, the construction of the roundabout and other minor works will finalise this project. Expenditure for the year was \$1.026m. Total expenditure to 30 June 1988 was \$1.415m.

Detailed design plans for landscaping this area were completed for planting in September/October, 1988.

Lake Highway

Golden Valley to Breona

A further 0.5 km of road was upgraded and sealed during the year. Clearing, excavation and formation work continued south for a further 4.9 km. Pumicestone Creek Culvert and related roadworks were completed at a cost of \$0.580m in 1987-88. Total cost to 30 June 1988 was \$708 000. This twin cell culvert was constructed in October. Expenditure on this section in 1987-88 was \$128 000 and total expenditure to 30 June 1988 was \$138 000. Overall expenditure on road and bridgeworks to 30 June 1988 was \$3.118m.

Construction of the twin cell culvert, Pumicestone Creek Bridge, was completed in October 1987. Expenditure in 1987-88 was \$128 000 and total expenditure to 30 June 1988 was \$138 000. Overall expenditure on road and bridgeworks to 30 June 1988 was \$3.118m.

Lyell Highway

Donaghys Hill to Victoria Pass

Several minor deviations and sections of pavement restoration were designed. Some 3.14 km were designed for restoration and full design was undertaken for the minor deviations. The balance, some 15.9 km, will be restored on an 'as-is' basis without plans. Works starting in 1988-89 are to be funded by a Gordon below Franklin Dam Compensation allocation from the Federal Government.

Victoria Valley Road to 6 km South

This rehabilitation project extends from the junction of Victoria Valley Road at Bronte Lagoon for 6 km south. Work began in December and 4.7 km of drain cleaning and digouts were completed, together with 3 km of sub-base. Total expenditure to 30 June 1988 was \$480 000.

King River Development

Design of the King River Bridge was completed.

HEC designs for the Lyell Highway deviation, east of Princess River to Kelly Basin Road, arising from the construction of Lake Burbury were being checked by the DMR. The 7.2 km deviation includes the King River Bridge length, 0.35 km.

Murchison Highway

Henrietta

Design was approved in principle for the elimination of a series of substandard corners.

Devonport Main Road

Horsehead Creek to Victoria Bridge

This project was completed. Expenditure in 1987-88 was \$143 000 and the total cost to 30 June 1988 was \$833 000.

Waratah Main Road

Heazlewood River Bridge and Road Approaches

Design of the bridge and the improved road alignment to the bridge was completed and issued.

Construction of this single span, 22.3 m long bridge began in October. Precast, prestressed beams were manufactured at Round Hill, Burnie. At the end of the year, the substructure was at an advanced stage. Completion is expected by the end of September 1988. Expenditure in 1987-88 was \$223 000.

Wilmot Main Road

A preliminary investigation was undertaken over a distance of 21 km from Alma Bridge, 17 km north of Wilmot, to Masons Road, 4 km south of Wilmot. Further investigation of future traffic needs will be required.

Forth Main Road

Curve Improvements near Braddons Lookout

A design improving the horizontal and vertical sight distances was completed and issued.

A section approximately 500 m east of Braddons Lookout Road intersection was reconstructed correcting a sub-standard corner. Expenditure to 30 June 1988 was \$161 000.

Frankford Main Road

Bends at Hermitage Lane

Survey was undertaken for future design to improve the alignment of this 0.8 km section.

Port Sorell Main Road

Pardoe Airport Road and Climbing Lane

The design of a roundabout to replace the present junction with Pardoe Developmental Road and the road to East Devonport was approved in principle and detailed design was proceeding. Design investigation was being undertaken for a climbing lane.

Railton Main Road

Coiler Creek Bridge Approaches

Preliminary design was undertaken on five optional alignments for road approaches to the proposed replacement for the existing timber bridge.

Sheffield Main Road

Railton to Lowes Creek

Design was received from the consultants for improvement to the road for 2 km south of the reconstruction through Railton.

The remaining 400 m section, including the Whitewater Creek culvert, of a 2.4 km section through the township of Railton was completed. Expenditure for 1987-88 was \$294 000 and total expenditure to 30 June 1988 was \$1.769m.

Nook Road Junction

Design for improvements to this junction is nearing completion.

Tarleton Road Junction

Design for improvements to this junction was almost completed.

Weekes Road Junction

Design to improve substandard vertical and horizontal curves on either side of this junction was virtually complete.

WEST COAST LINK ROADS

Good progress was made on each of the three Link Roads aided by the seven month dry spell which ended in mid April 1988. For the Guildford Hampshire Link Road, and the Que River to Leary's Corner Link Road work was able to be carried out over the full length and for the Smithton Zeehan Link Road breakout was achieved to the Lindsay River.

Guildford to Hampshire Link Road

Wey River Bridge

This twin box culvert is now complete with fill over the structure to formation level. Expenditure for 1987-88 was \$169 000 and the total expenditure to 30 June 1988 was \$419 000.



Roadworks

Progress was concentrated in the area of earthworks, which were almost completed during the extended summer period, with remaining sections totalling only 600 m. Pavement works progressed to placement of sub-base over 6 km and running surface over a further 10 km.

Drainage was concentrated in critical areas. The total cost of bridge and roadworks in 1987-88 was \$2.886m and the total overall cost to 30 June 1988 was \$10.002m.

Que River to Learys Corner Link Road

Further amendments to the consultant's design were made in liaison with North West District Office. Design continued for the junction with the Hellyer Mine access road and for a rail underpass for the spur line to Hellyer Mine.

Earthworks are substantially complete on the 26.5 km length of the link road. A layer of sub-base was placed over 22.5 km and 7 km was brought up to full sub-base depth. Box and pipe culverts were substantially completed. Expenditure for 1987-88 was \$2.107m and the total cost to 30 June 1988 was \$9.451m.

Smithton to Zeehan Corridor

Rebecca Road to Couta Rocks

Final pavement works on this 8.2 km section were completed. Expenditure for the year was \$232 000.

Blackwater Road to Balfour

Good progress was made with earthworks, drainage and pavement works. The road was then accessible to all vehicles for a distance of

some 10 km south from Blackwater Road junction. Pavement materials were obtained adjacent to the road, enabling substantial savings to be made. Expenditure in 1987-88 was \$1.740m and the total cost to 30 June 1988 was \$5.746m.

Balfour to Lindsay River

Plans for 11 km were completed and issued for construction. Design was also in progress for the Lindsay River Bridge.

LOCAL ROADS

Cradle Mountain Tourist Road

Cethana Turnoff to Learys Corner

Earthworks, culverts and sub-base were completed during 1987-88. Expenditure for 1987-88 was \$254 000.

ROAD AND BRIDGE PROJECTS South East District

NATIONAL ROADS

Brooker Highway

Junction with Lyell Highway and Midland Highway at Granton

Upgrading works including resurfacing and extra lane work on the Midland Highway through lanes were completed between September and November. The total cost was \$105 000.

Midland Highway

Bridgewater Bridge Strengthening

As a result of the decision to upgrade the legal highway load to 41 tonnes, extensive strengthening of this bridge became necessary. The structure is subject to a load limit of 38 tonnes, pending completion of the works, designed by Maunsell and Partners. Work began on strengthening the approach spans in October.

The project comprises:—

- fabrication of special temporary trusses to act as falsework
- attaching cover plates to the top and bottom flanges of three of the four plate girders in each of the 11 approach spans
- attaching cover plates to the top and bottom flanges of the 16 floor beams and to four of five stringers etc., in the two flanking spans and
- strengthening the lift span's pier cross-heads

At the end of the year, two temporary trusses had been fabricated and were being used to provide support for the girders as they were being fitted with the additional cover plates. Strengthening of the girders in spans one and two was completed.

Strengthening of the approach spans is expected to be completed in December 1989. Expenditure to 30 June 1988 totalled \$431 000.

Brighton/Pontville Bypass

A public display of the proposal was held at the Brighton Council Chambers at Gagebrook in December. The display did not reveal any issues which would warrant a change to the alignment of the preferred eastern route. An overview report was forwarded to the Commonwealth Government seeking approval to adopt this corridor for the National Highway route.

Bagdad Bypass

Preliminary planning work has continued to establish the future National Highway route in the Mangalore and Bagdad areas. Possible corridors have been identified along the eastern side of the Bagdad Rivulet Valley extending northwards from the Brighton/Pontville Bypass to Constitution Hill. A detailed appraisal of the options is being undertaken.

Constitution Hill

A 0.3 km section and a 0.4 km single lane section were rehabilitated by replacement of the poor quality basecourse during April. The total cost was \$143 000.

URBAN ARTERIAL ROADS

Hobart Southern Outlet Road

Stage 1 — Duplication

This 1.7 km section, extending from Olinda Grove to Proctors Road Underpass, was opened to traffic on 14 October 1987.

The geological fault which developed in the cutting necessitated some amendment to design to enable modification to the profile of the cutting face and involved the additional excavation of some 100 000 m³ of material.

Some remedial works began after further instability problems arose following rains in May. Investigation and restoration were continuing. Expenditure on Stage I in 1987-88 was \$814 000.

Stage II — Duplication

Design was completed for this 1.9 km section, extending from Proctors Road Underpass to Shaw Road Underpass.

Accelerated works began in April, aimed at opening the section in December 1988. About 68 000 m³ of solid material were to be removed from cuttings at the northern and southern ends. A 1.7 km section was paved and sealed in May. Expenditure in 1987-88 was \$1.755m.

Stage III — A — Duplication

Design of the 2.8 km section from Shaw Road Underpass to the existing Groningen Road Overpass, Shaw Road Underpass, Browns River Culvert and the new Groningen Road Overpass was completed.

The first stage of the Shaw Road Underpass, to comprise two bridges supported on a combined reinforced earth retaining wall, began in August and was completed in January. This was the first time in Tasmania that a temporary wire wall had been incorporated in a reinforced earth retaining wall to allow construction in two stages.

Expenditure in 1987-88 was \$300 000 and total expenditure for Stages I-III to 30 June 1988 was \$8.778m.

Stage III—B—Duplication

Design was well advanced in the area of the Kingston Interchange, which includes on and off ramp accesses to the Firthside subdivision and a loop catering for traffic to Hobart from Kingston.

Design was completed for landscaping but amendments were being considered in the area of the 'Hopfields' as a result of a request from an affected property owner. A modified plan was prepared for landscaping adjacent to Kingston High School for a Spring planting.

Bellerive Bypass

Final detailed design continued over the 3.54 km section from Mornington Interchange to Rokeby Main Road, concentrating on the narrow 1.7 km Howrah corridor and the combined Besser Tasmania and DMR Maintenance Depot access. Other design changes were made as a result of construction activities on the 1.84 km section from the interchange to Ninabah Street. The Shoreline Drive roundabout concept design was completed.

Analysis for noise attenuation measures, particularly where the road is adjacent to private residential areas, was completed.

The Bellerive Bypass Working Group again addressed many of the issues raised in the Howrah area. The impact of the Bypass on the Shoreline Drive/Rokeby Road area was investigated and recommendations to solve potential traffic problems were made. Further investigations were proceeding before adoption of the recommendations into the final design drawings.

The effect of the Bypass design on existing services along the route was investigated and some relocations were undertaken. Service authorities were aware of the DMR design proposals and were preparing designs for their service relocations to meet this Department's construction activities.

Mornington Interchange Overpass

This structure was completed in the previous financial year, but final pier protection and approach guard fencing were constructed in 1987-88 at a cost of \$38 000. The total spent to 30 June 1988 was \$1.184m.

Mornington Interchange and Roundabout

Construction of the interchange recommenced during September, involving drainage, pavement and kerb and gutter works and the relocation of services and roundabout construction.

The interchange was opened to traffic on 2 February, after which work began on the construction of Ramp 4, completed in mid-May. Work continued on landscaping and paving. Expenditure in 1987-88 was \$1.486m.

Detailed design plans for landscaping were prepared for the Interchange area and planting is scheduled to begin early in October 1988.

Roadworks—Mornington Interchange—Shoreline Drive

Construction recommenced on the Bypass in February and earthworks progressed to the Ninabah Street cut, a total distance of 2.1 km.

Work involved the removal of 20 000 m³ of fill from borrow from behind the Mornington Depot as well as 30 000 m³ of fill from borrow from the Hobart Regional Water Board's reservoir site.

Hard rock ground conditions were experienced in two sections before Ninabah Street but problems were overcome by the use of rock breaking machinery. Expenditure in 1987-88 was \$727 000.

Sirius Street Footbridge

Design of this multi-span, 89 m long footbridge was completed and work began in January. The structure has reinforced concrete piers, a reinforced concrete helical ramp and post-tensioned prestressed concrete beams over the traffic lanes.



Work on this project is not continuous as the direct control gang is being used at Bridgewater Bridge when movement of the temporary trusses takes place. Completion is expected by February 1989. Expenditure in 1987-88 was \$71 000.

Total expenditure on the Bypass for 1987-88 was \$2.336m. The total cost to 30 June 1988 was \$7.357m.

South Arm Secondary Road, Rokeby to Lauderdale

Investigations to establish the appropriate location for this corridor were incomplete. In order to assist in the planning, additional survey work had to be undertaken along the existing route so that access issues on this option could be resolved.

It was expected that a recommendation for the corridor would be possible towards the end of 1988.

Tasman Highway

Acton Road to Holyman Drive

Investigations to establish the appropriate corridor for the future four lane divided highway to the airport were completed. The route will be proclaimed, following discussions with affected property owners. Options linking Acton Road to the Colebrook Main Road were still under investigation.

Tasman Highway/Davey Street Extensions

Stage I—Extension of Davey Street from Hunter Street to Park Street

Considerable investigation and recording of the Hunter Island Causeway were undertaken. However, pending the choice of a suitable form of public display and funding source, the excavation was back-filled to prevent deterioration. The Hobart City Council was considering further measures to prepare a suitable display and historical interpretation as a part of its proposed upgrading of Hunter Street.

The DMR completed this contract in July. Although the contract cost was \$1.193m, the final construction cost was \$955 000, producing a profit of \$238 000. The city-bound lanes of the Tasman Highway extension were opened to traffic on 17 June 1987 but the official opening of Stage I was deferred until 16 October 1987.

Stage II—Brooker Avenue to Tasman Highway, Davies Avenue

This stage was completed in July as a direct control project. Expenditure in 1987-88 was \$837 000 and the total cost to 30 June 1988 was \$2.242m. It was officially opened in conjunction with Stage I on 16 October.

Stage III—Davies Avenue Underpass

Design was completed and contract documentation was prepared in the Bridge Division. The completed project will greatly improve access to the Domain, Regatta Ground and Cenotaph areas.

A contract was awarded to Hazell Bros. Civil Contracting Pty. Ltd. for construction of a single span bridge, supported by a reinforced earth retaining wall and associated roadworks. The DMR was sub-contracted to build the superstructure of the bridge. Construction began in January and was half completed when the first stage was opened to traffic on 30 June 1988. Expenditure in 1987-88 was \$851 000.

Supply of the panels and other components for the retaining walls was carried out under contract by Reinforced Earth Pty. Ltd. The DMR was the sub-contractor for the manufacture of the concrete panels at the Lutana precasting yard. Expenditure on this contract in 1987-88 was \$175 000. Completion was expected in November 1988.

Overall expenditure on the project in 1987-88 was \$3.268m, and the total cost to 30 June 1988 was \$8.447m.



Victoria Dock Bridge Strengthening

Design and construction for this project was completed. The bridge required extensive superstructure modification for a higher loading. The complete swingspan was lifted onto the approaches where extensive replating and weld strengthening was undertaken before the existing concrete deck section was removed and recast with heavier reinforcing. Total expenditure was \$65 000.

Brooker Avenue

Derwent Park Road Junction

The first stage of the junction improvements was opened to traffic in late December. The improvements removed delays for traffic entering and exiting Derwent Park Road. The permanent islands, landscaping and local street connections were completed in February. The project was notable for the maze of underground services encountered. Expenditure for 1987-88 was \$500 000 and the total cost of the project was \$587 000.

Brooker Highway

Derwent Centre

Detailed design of the access from the Highway to the Centre under construction at Wilkinson Point was proceeding.

Berriedale Road to Abbotsfield Road Duplication

The duplication of the Brooker Highway progressed from Berriedale Road northward. The extra carriageway was constructed except for the tie-in locations, to Jimbirn Street Overpass. The works will incorporate a 3.8 m wide median. The existing highway is to be widened and overlaid with asphalt to provide an additional 2 m shoulder. Expenditure in 1987-88 was \$1.048m and the total cost to 30 June 1988 was \$1.132m.

Jimbirn Street to Granton

Design was completed for the second carriageway between Jimbirn Street footbridge and Claremont Link Road and plans issued for construction. Design for the remaining length northward to Black Snake Lane, Granton was proceeding.

Claremont Link Road Underpass

Work began on precasting of beams for this job.

Channel Highway

Antarctic Division, Kingston

A 120 m deceleration lane was constructed on the northern approach to the Antarctic Division Headquarters at the request and expense of the Antarctic Division. Expenditure in 1987-88 was \$35 000.

Snug to O'Briens Hill—Snug Creek Bridge

This single span structure was completed by direct labour in July at a total cost of \$190 000. Expenditure in 1987-88 was \$35 000.

O'Briens Hill to Nicholls Rivulet Main Road

All design and service drawings for this 5.32 km section were completed and awaiting issue. Accommodation works drawings were issued and work was in progress.

Huon Highway

Summerleas Road Junction

Design of this junction, incorporating deceleration lanes and right-turn lanes, was completed and issued.

A 400 m section north of this junction was widened to provide deceleration lanes for traffic turning from the Highway into Summerleas Road. Work included extensive channelisation.

Further widening south of the junction may be required to allow for continuous two lane traffic each way. Expenditure in 1987-88 was \$96 000.

Tasman Highway

Pittwater Road Junction

Drawings were prepared for the upgrading of this junction, but due to proposed developments in the area, construction was deferred. Rationalisation of the design standard for this site was being investigated in relation to the developments which may ultimately proceed in this area.

RURAL ARTERIAL ROADS

Arthur Highway

Hawks Hill Deviation

The majority of earthworks were completed to formation level for most of the first 2 km. Due to inclement weather, the rate of construction was scaled down. Expenditure in 1987-88 was \$600 000 and the total cost to 30 June 1988 was \$1.498m.

Eaglehawk Neck to Masons Point

Clearing, grubbing and earthworks were completed. Excavation was made difficult due to the closeness and size of rock boulders. The earthworks were undertaken during the wet winter months resulting in a high moisture content in the excavated material. This had to be discarded instead of being placed in the embankments.

Sub-base was placed on 2 km with base course placed over 0.5 km. Subsoil drains were constructed over 2.5 km. Wavewall protection and all blasting were completed. Culverts were completed except for 40 end walls. Expenditure for 1987-88 was \$1.316m.

Masons Point to Taranna

Design which follows the existing corridor was completed and drawings were issued.

This contract was let to Hazell Bros. Pty. Ltd. and expenditure in 1987-88 totalled \$276 000.

McMahons Hill to Oakwood

Preliminary design to improve some substandard horizontal and vertical curves on this 2.8 km section commenced.

Channel Highway

Nicholls Rivulet Main Road to Ferry Road

Preliminary design for this 2.93 km section commenced.

Cygnets to Huonville

Survey using the MOSS system was in progress along a tentative design line. In some areas, a number of options were to be investigated.

Huon Highway

Grove to Huonville

A further improvement to the junction at Grove was designed and approved in principle.

The 2.6 km section to Lollara Main Road was completed. Other works included fencing and service relocation.

Fourteen Turn Creek Culvert

This work consisted of a 9 m extension to the existing twin cell box culvert and was undertaken in August/October in conjunction with widening of the Highway. The total cost was \$48 000.

Parsons Creek Culvert

Design of this culvert was completed.

This work, which was similar to the Fourteen Turn Creek culvert works, was completed in December. The total cost was \$58 000. Expenditure from Grove to Huonville in 1987-88 was \$1.564m and the total cost to 30 June 1988 was \$2.137m.

Through Franklin

Road design was nearly complete, apart from some minor hydraulic details. Drawings for the northern most section near Prices Creek were issued.

Prices Creek Culvert and Approaches

Design was completed for this structure, a twin cell reinforced concrete precast box culvert replacing an old reinforced concrete bridge in Franklin. The culvert sections were the first large culvert units cast in the Lutana Precasting Yard. The construction period was May/June. Work on the road approaches is not complete. Expenditure in 1987-88 was \$111 000.

Lake Highway

Steppes to Poatina Main Road Turnoff

Rehabilitation was undertaken on the section from Poatina Turnoff to St. Patricks Plains Creek Bridge, a distance of 4.8 km, including the test section of 0.6 km. Expenditure in 1987-88 was \$302 000 and the total cost to 30 June 1988 was \$554 000.

Lyell Highway

Fenton Main Road Junction

A final decision on the alignment to be followed for improving the approaches to the junction remains dependent on the quantities of excess material available from the section from Fenton Main Road to Gretna and the section through Gretna.

Fenton Main Road to Gretna

Work resumed in January on a 1.74 km section which includes the commencement of works in Gretna. By 30 June 1988 more than one third of the works has been undertaken. Sealing of the section is planned for October 1988. Expenditure in 1987-88 was \$583 000 and the total cost to 30 June 1988 was \$660 000.

Belmont Rivulet Bridge

This structure is a twin cell reinforced concrete precast box culvert with extensive inlet and outlet works. Construction period was July/August. The total cost was \$80 000.

Through Gretna

Plans were completed for reconstructing the Lyell Highway through Gretna. The design incorporated drainage improvements negotiated with the Hamilton Council and also included crossings for the Gretna sewerage scheme.

Norton Mandeville to Ouse

Rehabilitation work and widening began in April approximately 6 km north of Gretna. Two gangs were working simultaneously. The first was widening for drainage and repairing failures ahead of the second gang which was widening the pavement by approximately 2.0 m in preparation for sealing. Expenditure in 1987-88 was \$596 000.

Ouse River Pedestrian Footway

The existing bridge, which was constructed during the 1940's has no footpath. The subsequent development of a hospital and units for elderly people on the eastern bank of the river generated the need for a separate footway for the increasing number of pedestrians, many of whom are elderly. Design is under way for a low level timber bridge on piles. A gravel pathway will connect the public park on the Ouse town side of the river to the hospital car park.

Tasman Highway

Fingerpost Road to Black Charlies Opening

A 0.6 km section of the Highway and 0.3 km of Fingerpost Road were reconstructed in the course of the junction works. Sealing on these sections was undertaken in April. Expenditure for the financial year was \$300 000 and the total cost to 30 June 1988 was \$2.754m.

Improvements at Brockley

Alignment was under investigation to improve the present horizontal alignment and width. Greater improvement may be possible by utilizing material excavated from Prosser Gorge.

Prosser Gorge, Orford

An assessment of the desirable road location through the Gorge was made and reported. This was required to determine whether to remain in the existing location or seek a radically new route through the Gorge.

Options for improving and widening this scenic 5.45 km section were being investigated. Major problems to be overcome are the adjacent Prosser River, the steep rock faces bounding the southern side of the highway and the effect of the works on traffic.

Bruny Main Road

Lennon Main Road to Adventure Bay Turnoff

The 1.75 km Murrayfield deviation was designed but due to financial constraints, was not constructed. There remains only the 2 km section from Murrayfield to Great Bay and a 1.5 km section on The Neck to be designed, which will complete plans for the whole 22 km project.

Construction continued with sealing of the 2.8 km section to the south end of Great Bay and completing earthworks along the 1.7 km Campbells Lane Section. Some pavement material was placed at the southern end of Campbells Lane. Expenditure in 1987-88 was \$486 000 and the total expenditure to 30 June 1988 was \$3.385m.

Colebrook Main Road

Richmond Bypass

The route of the proposed corridor was identified with sufficient accuracy to determine boundaries. The proposal was discussed with the Australian Heritage Commission, the National Trust of Australia (Tasmania) and the Richmond Municipal Council. All three bodies agreed in principle to the proposed route. The proposal will be submitted to the Department of the Environment and a public display is anticipated before the route is proclaimed under Sections 9A and 52A of the Roads and Jetties Act.

Fenton Main Road

Derwent River Bridge (Macquarie Plains)

Investigation into the loading carrying capacity of this bridge was undertaken by Consultants, Stephenson Maunsell and Partners who indicated ways of strengthening the structure to current standards.

Westerway Bypass

Design of Nations Creek Culvert was completed.

Westerway to National Park

Road design for the 1.6 km section in the vicinity of Tyenna River Bridges Nos. 1571 and 1581 was completed and the design of Bridge No. 1581 was also completed. Approximately 1 km on the western side of the bridges to National Park will require some design. Design of Bridge No. 1582 was under way.

'As is' reconstruction continued for a further 2 km. This completes the work almost to Belchers Siding where it is proposed that replacement of the two bridges and the 1.6 km road approaches will be undertaken from design plans in 1988-89. Expenditure in 1987-88 was \$808 000 and the total cost to 30 June 1988 was \$2.255m.

UNCLASSIFIED ARTERIAL ROADS

City of Hobart

Burnett Street Widening

This work was undertaken by Council with a dollar for dollar subsidy from the DMR. Work concentrated on construction of a roundabout at the junction of Burnett and Murray Streets and a safety barrier dividing the length of Burnett Street between Elizabeth and Murray Streets. Progressive contributions to Council amounted to \$422 000 to 30 June 1988.

Municipality of New Norfolk

Glenora Road

Since 1978-79 the DMR has provided grants to Council to assist in upgrading this road, which is a Council responsibility.

A grant of \$79 000 was made in 1987-88, bringing the total assistance for this road to \$613 000.

Glenora Road—Plenty River Bridge

Design was in progress for a bridge to replace a timber bridge which is nearing the end of its useful life. The proposed new bridge will be skewed to the existing bridge and will be from 10 to 17 m upstream.

The recommended design is a three span structure composed of simply-supported, precast, pre-tensioned deck planks with in situ deck slab and span length of 14.6 m. The bridge superstructure would be supported by two reinforced concrete piers founded on spread footings and high-level beam abutments.

LOCAL ROADS

Nugent Main Road

A 250 m deviation was constructed in the vicinity of Delmore Road Junction. This involved replacing two timber structures with a 1 500 mm diameter concrete culvert. The corner at the previous Delmore Road Junction also was improved. The total cost was \$67 000.

Tea Tree Secondary Road

Duffys Bridge Over Strathallan Rivulet

Preliminary design for re-alignment of the road approaches for a replacement bridge was proceeding. Possible diversion of Strathallan Rivulet was under consideration.

'As is' reconstruction continued east of Rekuna and another 0.9 km was sealed in December. The previously reconstructed 1.2 km section at Rekuna was further improved by property acquisition, widening and sealing the shoulders and resealing them to the running lanes. A dangerous corner half way between Tea Tree and Rekuna was improved by major sight benching with minor vertical and horizontal re-alignment. Total cost for 1987-88 was \$533 000.

UNCLASSIFIED LOCAL ROADS

Flagstaff Gully Link Road

This road was opened to traffic on February 1988 following minor junction works at the northern end. A two coat seal was then applied to the road during April. Expenditure in 1987-88 was \$106 000 and the total cost to 30 June 1988 was \$1.761m.

Lune River Bridge

The three river piers and both abutments were completed. The 16 prestressed 21 m long concrete beams were cast in the Lutana precasting yard by segmented construction then transported to site where they were joined and post tensioned. The beams were placed in November and March. At the end of June, deck concreting was taking place with completion expected in October 1988. The 1987-88 cost was \$477 000 and the total cost to 30 June 1988 was \$796 000.



ANNEXURE A

CONSOLIDATED FUND WORKS AND SERVICES EXPENDITURE 1987-88

1986-87 \$		1987-88 \$
	ROADS AND BRIDGES—	
1 896 810	Falmouth to Chain of Lagoons Link Road	1 928 075
118 335	Flagstaff Gully Link Road	105 561
448 343	Glenorchy City Centre Bypass .....	.....
2 326 903	Guildford to Hampshire Link Road	3 082 401
3 778 416	Hobart Southern Outlet	922 247
468 069	Lake Leake Main Road .....	.....
10 000	Masters Games Signing	10 252
.....	Proposed Extension at Scottsdale	425
2 389 960	Que River to Learys Corner Link Road	2 108 791
2 002 848	Smithton to Zeehan Corridor	2 015 443
940 000	Refund to Consolidated Fund—Recurrent Expenditure for Administration	650 000
<u>14 379 684</u>	TOTAL (Roads and Bridges)	<u>10 823 195</u>
	OTHER WORKS	
200 000	Launceston Flood Protection Scheme	200 000
359 882	Jetties and Facilities for Fishermen	489 420
<u>1 360 434</u>	Upgrading of Fishing Ports	<u>307 385</u>
<u>1 920 316</u>	TOTAL (Other Works)	<u>996 805</u>
<u>16 300 000</u>	TOTAL (ALL WORKS)	<u>11 820 000</u>

ANNEXURE B

FINANCIAL ASSISTANCE TO LOCAL GOVERNMENT AUTHORITIES

1986-87		1987-88
\$		\$
	Direct Grants—	
472 264	Arterial Roads—Construction	199 548
7 115 943	Local Roads—Construction	5 970 873
3 272 362	Maintenance	3 517 923
10 860 569		9 688 344
	Works on Council Roads Financed and Carried out by DMR—	
2 577 843	Repair and Renewal of Bridges.....	2 804 767
256 620	Roadworks	524 881
13 695 032	TOTAL	13 017 992

ANNEXURE C

BITUMINOUS SURFACING COMPLETED (km) 1987-88

Road	Hot Bitumen Sprayed			Seal	
	Prime and Seal	Primer Seal	Flush Reseal	Asphalt	Total
South-East District					
Arthur Highway			5.23	....	5.23
Brooker Highway		1.80	....	2.20	4.00
Channel Highway			1.50	....	1.50
East Derwent Highway				0.25	0.25
Lake Highway	4.20	....	....	....	4.20
Huon Highway		2.67	....	0.15	2.82
Lyell Highway			11.36	....	11.36
Midland Highway		5.77	5.79	2.60	14.16
Southern Outlet Road		1.68	....	1.80	3.48
Tasman Highway	0.69	2.69	....	5.19	8.57
Bruny Main Road	2.70	....	....	....	2.70
Colebrook Main Road			1.24	....	1.24
Fenton Main Road		2.10	....	....	2.10
Boyer Secondary Road			0.75	....	0.75
Bream Creek Secondary Road			2.04	....	2.04
Lachlan Secondary Road			5.34	....	5.34
Nubeena Secondary Road			9.91	....	9.91
Scotts Secondary Road			4.01	....	4.01
Tea Tree Secondary Road			2.02	....	2.02
Freestone Point Developmental Road			5.27	....	5.27
North-West District					
Bass Highway	0.50	1.50	11.10	5.50	18.60
Lake Highway		0.50	....	....	0.50
Lyell Highway			2.37	....	2.37
Murchison Highway			33.10	1.59	34.69
Zeehan Highway			2.57	....	2.57
Calder Main Road			3.12	0.17	3.29
Castra Main Road			5.02	....	5.02
Forth Main Road	0.50	....	....	....	0.50
Frankford Main Road				2.71	2.71
Kindred Main Road			6.12	....	6.12
Mengha Main Road			7.83	....	7.83
Mole Creek Main Road			1.64	....	1.64
Waratah Main Road			5.30	....	5.30
Cradle Mountain Tourist Road			2.18	....	2.18
North-East District					
Bass Highway			9.42	1.00	10.42
East Tamar Highway		3.93	....	2.85	6.78
Midland Highway				1.47	1.47
Tasman Highway	7.57	2.61	17.21	4.70	32.09
West Tamar Highway		10.91	8.39	4.10	23.40
Blessington Main Road			13.10	....	13.10
Bridport Main Road				3.45	3.45
Frankford Main Road		9.33	8.86	2.65	20.84
Hillwood Main Road			2.93	....	2.93
Illawarra Main Road				0.90	0.90
Kelso Main Road	1.42	....	....	....	1.42
Lady Barron Main Road			4.16	....	4.16
Lilydale Main Road			7.13	0.40	7.53
Poatina Main Road	5.00	1.35	....	....	6.35
Pipers River Secondary Road			5.70	0.80	6.50
TOTAL	17.58	45.49	216.71	45.83	325.61

In addition to the above the following works were also carried out by the Department:—

Launceston Southern Outlet Glen Dhu Corridor 5.40 km primer seal and 3.60 km asphalt

Prospect Bypass 3.0 km prime and two coat seal

Flagstaff Gully Link Road 1.90 km flush reseal

Maydena Subsidised Road 2.12 km flush reseal.

ANNEXURE D

ROAD CONSTRUCTION PLANT SUSPENSE ACCOUNT

*Income and Expenditure Statement for financial period 29 March 1987
to 26 March 1988*

Period Ending 28.3.87 \$		Period Ending 26.3.88 \$
	INCOME—	
13 468 256	Plant Hire	13 529 768
7 653 829	Workshop Charges	7 854 946
169 285	Miscellaneous Income	123 304
146 693	Net Profit on Sale of Surplus Plant	139 588
<u>21 438 063</u>	TOTAL	<u>21 647 606</u>
	EXPENDITURE—	
8 764 486	Plant Operation and Maintenance	8 886 038
7 711 533	Workshop Operations	7 429 474
1 919 855	Plant Depot Administration & Maintenance	1 914 334
1 271 941	Depreciation on Plant and Equipment	1 342 928
22 022	Depreciation on Land and Buildings	21 954
<u>19 689 837</u>		<u>19 594 728</u>
1 748 226	Excess of Income over Expenditure for Period	2 052 878
<u>21 438 063</u>	TOTAL	<u>21 647 606</u>

ROAD CONSTRUCTION PLANT SUSPENSE ACCOUNT

Balance Sheet as at 26 March 1988

1987 \$		1988 \$
	NATURE AND SOURCE OF FUNDS USED—	
	Accumulation Account—	
984 405	Balance Brought Forward 29 March 1987	6 155 905
1 748 226	Surplus Transferred from Income and Expenditure Statement	2 052 878
3 423 274	Transfer from General Reserve for Increased Cost of Plant Replacement .....	....
<u>6 155 905</u>		<u>8 208 783</u>
	Funds provided by State Treasurer—	
194 607	Valuation of Stock Plant and Equipment, 30 June 1945	194 607
3 140 731	Loan Funds	3 140 731
	Other—	
6 769	Commonwealth Grants	6 769
611 897	State Highways Trust Fund	611 897
<u>10 109 909</u>	TOTAL FUNDS	<u>12 162 787</u>
	THESE FUNDS ARE REPRESENTED BY—	
	Current Assets—	
382 795	Cash at Treasury	1 371 182
138 258	Work in Progress	225 213
1 461 692	Accrued Revenue	3 562 919
6 117	Apprentice Tool Kits .....	....
<u>1 988 862</u>		<u>5 159 314</u>
	Current Liabilities—	
....	Apprentice Tool Kits	1 514
806 418	Accrued Expenses	1 144 985
<u>806 418</u>		<u>1 146 499</u>
1 182 444	Working Capital	4 012 815
	Fixed Assets—	
1 727 145	Land and Buildings	1 744 344
406 300	Less Provision for Depreciation	428 254
		<u>1 316 090</u>
19 621 268	Plant and Equipment	19 844 263
12 014 648	Less Provision for Depreciation	13 010 381
<u>10 109 909</u>		<u>6 833 882</u>
	TOTAL FUNDS	<u>12 162 787</u>

ROAD CONSTRUCTION PLANT SUSPENSE ACCOUNT

*Statement of Sources and Applications of Funds for financial period 29 March
1987 to 26 March 1988*

1987 \$		1988 \$
	SOURCES OF FUNDS—	
	Funds from Operations—	
21 291 370	Inflows of Funds from Operations	21 508 018
18 395 916	Less Outflows of Funds from Operations	18 229 846
2 895 454		3 278 172
	Reduction in Assets—	
	Current Assets—	
287 231	Work in Progress .....	.....
1 699	Apprentice Tool Kits	7 631
	Proceeds from Sale of Fixed Assets—	
401 423	Plant and Equipment	540 637
690 353		548 268
	Increase in Liabilities—	
	Current Liabilities—	
154 153	Accrued Expenses	338 567
3 739 960	TOTAL	4 165 007
	APPLICATIONS OF FUNDS—	
	Increase in Assets—	
	Current Assets—	
387 459	Cash at Treasury	988 387
253 664	Accrued Revenue	2 101 227
....	Work in Progress	86 955
	Fixed Assets—	
50 013	Land and Buildings	53 199
3 048 824	Plant and Equipment	935 239
3 739 960	TOTAL	4 165 007

ROAD CONSTRUCTION PLANT SUSPENSE ACCOUNT

NOTES TO AND FORMING PART OF THE ACCOUNTS

1. Reconciliation of funds from operations with operating excess:

\$		\$
2 895 454	Funds from Operations	3 278 172
146 735	Add/(Less)—profit on sale of assets	139 588
(1 293 963)	depreciation	(1 364 882)
1 748 226	Operating excess	2 052 878

2. Principal Accounting Policies

Basis of Accounting

The accounts have been prepared under the historical cost convention, and have not been adjusted to take into account changing money values or current valuations of fixed assets or their impact on the operating results.

Fixed Assets

All fixed assets are valued at historical cost, although certain workshop equipment items are revalued periodically, the last of which was undertaken in 1979-80, and was reflected in the accounts for that year.

Depreciation

Depreciation is charged on all fixed assets, down to a residual value. The methods used are:

Land and Buildings	2% annually on a reducing balance basis.
Light Vehicles	Fixed amount per kilometre or hour on a usage basis.
Trucks	30% annually on a reducing balance basis.
Heavy Equipment	20% annually on a reducing balance basis,
plus	25% of cost x hours worked
	10 000 hours
Workshop Equipment	10% annually on a straight line basis.
Minor Plant	Varies between 10% to 40% on a reducing balance basis.

Comparative figures are presented on a basis consistent with the current year.

3. Contribution to Salaries and Administrative Costs

The amount paid to the State Highways Trust Fund to cover those salaried public servants who are directly involved in this function.

ANNEXURE E

DETAILS OF CLASSIFIED ROADS BY LENGTH AND SURFACE TYPE (See Map Included)

	<i>Length in Kilometres</i>		<i>Total</i>
	<i>Sealed</i>	<i>Unsealed</i>	
State Highways	1 836.64	80.76	1 917.40
Main Roads	1 201.77	57.51	1 259.28
Secondary Roads	252.69	43.27	295.96
Tourist Roads	108.07	63.38	171.45
Developmental Roads	20.68	24.45	45.13
TOTAL	3 419.85	269.37	3 689.22



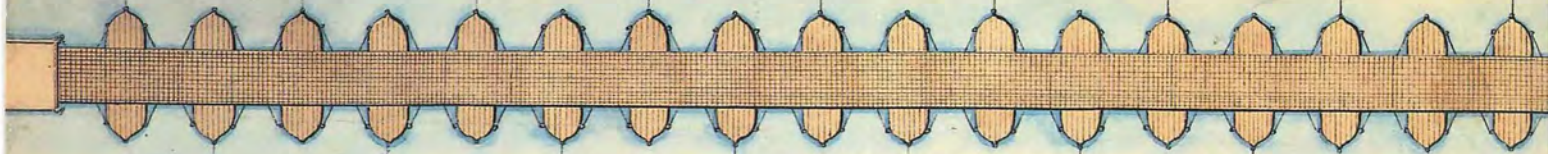
DEPARTMENT OF MAIN ROADS
TASMANIA

CLASSIFIED ROAD SYSTEM

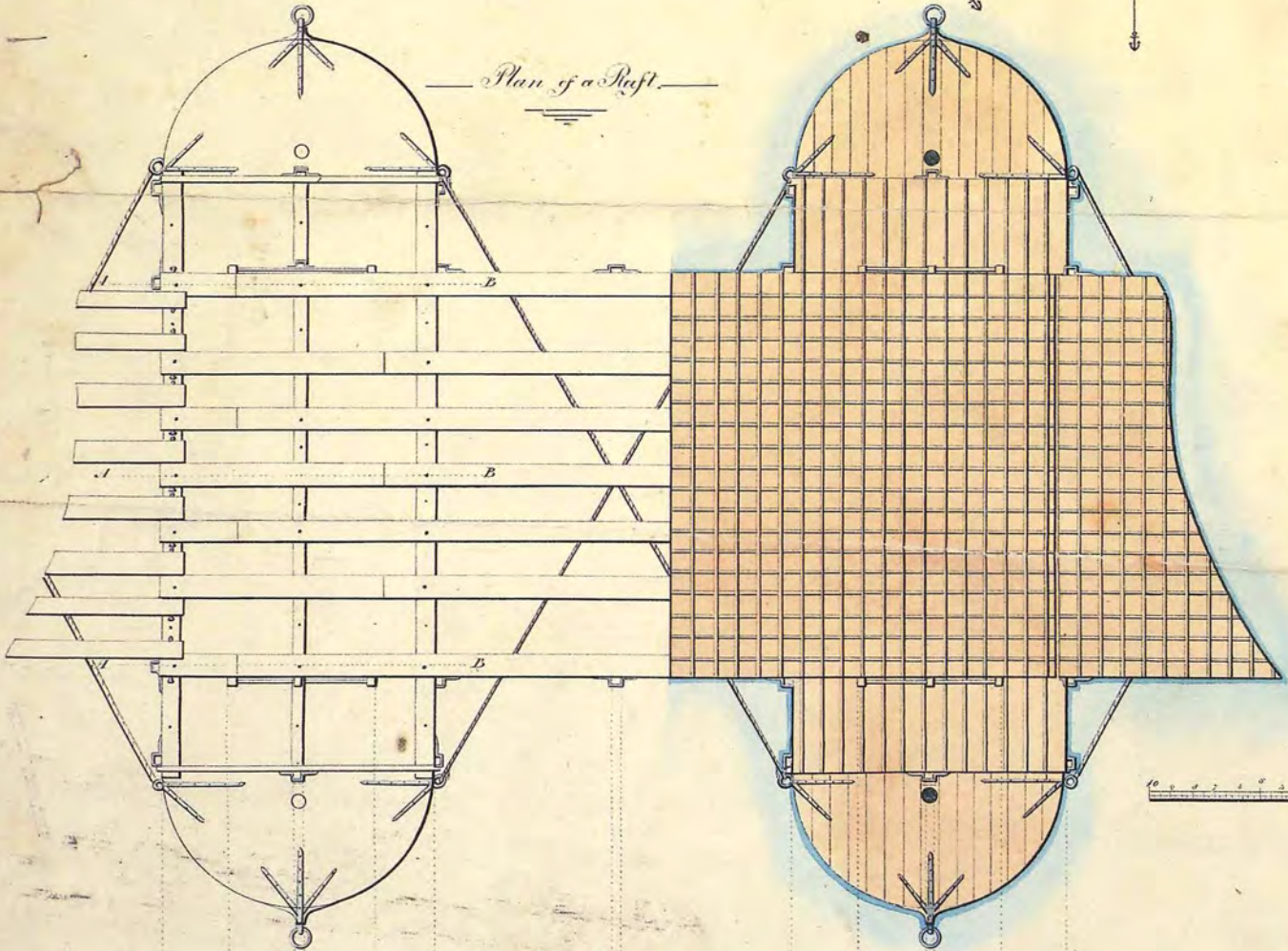


Plan of a Rope-bridge
 the River Looe
 at
 Newtown
 Van Diemens Land
 1822.

Scale of Feet
 0 1 2 3 4 5 6 7 8 9 10

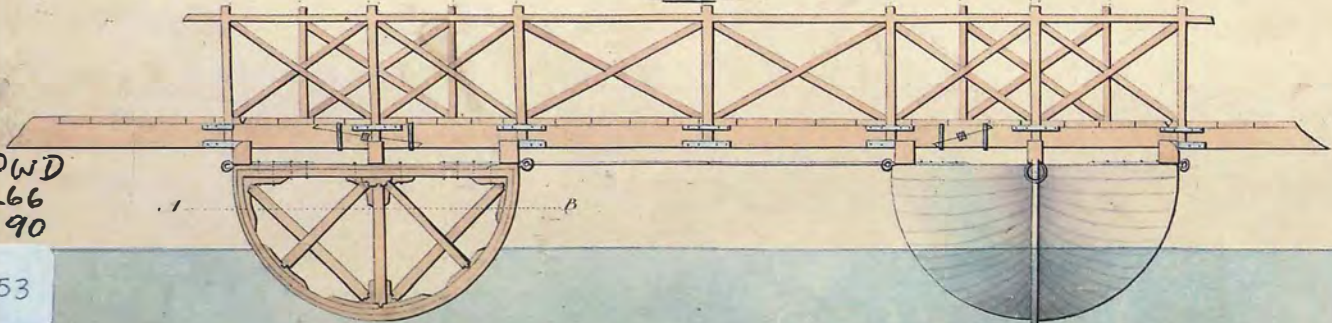


Plan of a Raft.



Scale
 0 1 2 3 4 5 6 7 8 9 10

Section of the Raft.



OWD
 266
 190
 53